



NATIONAL DEFENSE RESEARCH INSTITUTE

Evaluation of the Military Spouse Employment Partnership

Progress Report on First Stage of Analysis

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Preface

The Office of the Deputy Assistant Secretary of Defense for Military Community and Family Policy sponsored RAND National Defense Research Institute analysis to help assess whether and how the Department of Defense Military Spouse Employment Partnership addresses its objectives in supporting the employment of military spouses. This report documents the first phase of research to help meet the 2015 National Defense Authorization Act requirement for a “report evaluating the progress of military spouse employment programs.” A second report will document subsequent analyses. The project is part of a larger RAND effort to support the monitoring and evaluation of Military Community and Family Policy’s portfolio of Spouse Education and Career Opportunities (SECO) programs and initiatives. Other programs in the SECO portfolio include the My Career Advancement Account Program, career counseling services available through the Military OneSource SECO Career Center, and Department of Defense State Liaison Office initiatives to expand unemployment compensation eligibility for trailing military spouses and to secure cross-state endorsements of professional certifications and licenses.

This research should be of interest to policymakers responsible for programs or oversight of programs supporting military spouse quality of life, as well as scholars who study military spouse issues and program evaluation.

This research was conducted within the Forces and Resources Policy Center of the RAND National Defense Research Institute, a federally funded research and development center sponsored by the Office of the Secretary of Defense, the Joint Staff, the Unified Combatant Commands, the Navy, the Marine Corps, the defense agencies, and the defense Intelligence Community. For more information on the RAND Forces and Resources Policy, see www.rand.org/nsrd/ndri/centers/frp or contact the director (contact information is provided on the web page).

Contents

Preface	iii
Figures and Tables	vii
Summary	ix
Acknowledgments	xiii
 CHAPTER ONE	
The Need for an Evaluation of the Military Spouse Employment Partnership	1
Supporting the Well-Being of the Military Family	1
Challenges Facing Military Spouses	1
The Military Spouse Employment Partnership	4
The Imperative to Assess Programs That Support Education and Employment of Military Spouses	5
Objectives of the Study	5
Research Questions and Data Sources	5
Organization of the Report	7
 CHAPTER TWO	
Description of the Military Spouse Employment Partnership	9
Introduction	9
Components of the Military Spouse Employment Partnership	10
Characteristics of Partners	16
Summary	26
 CHAPTER THREE	
Assessment of Job Postings Available on Career Portal	27
Introduction	27
Location of Job Postings on the Career Portal	27
Textual Analyses of Job Postings	28
Summary	37
 CHAPTER FOUR	
Concluding Remarks and Next Steps	39
Concluding Remarks	39
Next Steps	41

APPENDIXES

A. Select Findings from the Survey of Active Duty Spouses (2012)	43
B. Methodology Used For Job Postings Analysis	45
Abbreviations	51
References	53

Figures and Tables

Figures

2.1.	Number of Military Spouse Employment Partnership Partners by Year.....	17
2.2.	Employer Partners by NAICS Supersector	21
2.3.	Employer Partners Reported Geographic Reach.....	23
2.4.	Percentage of Headquarters for Employer Partners by Region, Percentage of Total U.S. Active-Duty Force by Region, and Percentage of All U.S. Firms by Region	24
2.5.	Types of Employment Available from Employer Partners	25
3.1.	Geographic Dispersion of Career Portal Job Postings with Associated ZIP Codes.....	29
3.2.	Distribution of Sampled Job Posting Within the Career Portal by Geographic Region....	30
3.3.	Percentage of Job Types Among Job Postings.....	33
3.4.	Statements Regarding Experience in Job Postings.....	34
3.5.	Statements Regarding Educational Degree in Job Postings	34
3.6.	Percentage of Job Postings with Education Level in Description by Job Type.....	35
3.7.	Percentage of Job Postings with ‘Specialized’ Education Level in Description by Job Type	36
3.8.	Percentage of Job Postings with Experience Level in Description by Job Type	37
A.1.	Education Level of Military Spouses by Age Group (2012)	43
A.2.	Percentage of Military Spouses Reportedly Unemployed by Education Level (2012)....	44
A.3.	Percentage of Military Spouses Employed in their Career Field by Education Level (2012)	44

Tables

2.1.	Number of People Employed by Employer Partners by Quartile.....	22
3.1.	Occurrence of Frequently Searched Words in Job Titles.....	31
B.1.	Sales Representative Job Postings by Partner.....	47
B.2.	Classification Matrix on Held-Out Test Data for SVM Supervised Classifier	50

Summary

Supporting Military Families and Military Spouses' Employment Needs

Military service places distinct demands on service members and their families (U.S. Department of the Treasury and U.S. Department of Defense, 2012). In particular, frequent relocations can complicate military spouses' career trajectories (Booth, 2003; Booth, Falk, Segal, and Segal, 2000; Harrell, Lim, Weber, and Golinelli, 2004; Lim, Golinelli, and Cho, 2007). It is well documented that these frequent moves can have negative effects on the spouses' ability to find employment in occupations of their choosing, earn wages that match their skills, and maintain long-term careers (Cooke and Speirs, 2005; Harrell, Lim, Weber, and Golinelli, 2004; Lim and Schulker, 2010). Previous research has found that, compared with their civilian counterparts, military spouses are more likely to be unemployed (jobless, but actively seeking work) or underemployed (either working part-time involuntarily or having higher levels of education than required for their jobs) (Lim and Schulker, 2010; Maury and Stone, 2014).

Recognizing the challenges facing military families (and military spouses in particular), the White House published a directive in 2011 ordering the Department of Defense to expand the Army Spouse Employment Partnership, which had recruited 52 employer partners since its inception in 2003 to assist military spouses seeking private-sector careers, to serve Navy, Marine Corps, and Air Force spouses (White House, 2011, p. 17). The Military Spouse Employment Partnership was launched on June 29, 2011.¹ It is one of four initiatives under the Spouse Education and Career Opportunities (SECO) program, which is under the aegis of the Assistant Secretary of Defense for Readiness and Force Management's Military Community and Family Policy office.

In December 2014, the U.S. Congress mandated the evaluation of the Military Spouse Employment Partnership as part of the 2015 National Defense Authorization Act (PL 113–291, 2014). Within that law, Congress required the Secretary of Defense to “collect data to evaluate the effectiveness of the partnership program in addressing underemployment of military spouses; matching military spouses' education and experience to available employment positions; and closing the wage gap between military spouses and their civilian counterparts” (PL 113–291, 2014, Sec. 568).

¹ The program is distinct from the Military Spouse Preference program. The U.S. Congress established the latter under the Military Family Act of 1985 to provide preference in hiring eligible military spouses for civilian vacancies within the U.S. Department of Defense.

Objectives of the Study

To meet the congressional mandate and complement ongoing efforts to monitor the progress of its SECO programs already under way, the Office of the Deputy Assistant Secretary of Defense for Military Community and Family Policy asked the RAND Corporation to

- provide guidance on data and metrics that should be collected to support an evaluation of the Military Spouse Employment Partnership's effectiveness
- evaluate the extent to which the program is:
 - addressing unemployment and underemployment among military spouses
 - matching military spouses' education and experience to available employment positions
 - closing the wage gap between military spouses and their civilian counterparts.

Findings

To meet the study's objectives, the project was organized into five tasks. The analyses presented in this report summarize the first stage of analyses, focusing on findings to date of Tasks 1 and 2. This first stage of analysis took place from June through September 2015. A future report will summarize the results of the analyses conducted under all five tasks.

Tasks Undertaken for this Report

Task 1. Describe the Characteristics of Military Spouse Employment Partnership Partners

We used data from the Military Community and Family Policy office Partner Directory and publicly available data in the LexisNexis® Company Dossier (2009), a proprietary database of information on 13 million companies, to create a descriptive portrait of partners to help illustrate the diversity of employer partners that are members of the program and the extent to which these employer partners' characteristics align with types of employers that could best meet military spouses' needs and interests, as documented in military spouse surveys and in published research on military spouses.

As of July 28, 2015, the program had 288 partners. Of those, 272 were employers and 16 were members of the program's Spouse Ambassador Network, which are nonprofit organizations that connect military spouses with diverse networks of fellow spouses, employers, and career professionals. We found evidence of diversity in the type of employer partners: The majority of employer partners represent professional and business, education, health, or finance industries. Further, employer partners tend to be large (based on the number of people they employ), have an international or national presence, and be headquartered in the southern region of the United States. More than 70 percent of the employer partners report offering part-time employment opportunities; about 25 percent offer contractual, temporary, or seasonal opportunities; about 43 percent report offering telework opportunities, which is a growing trend for private- and public-sector employers in the United States.

The industries that the employer members represent, their size, and geographic scope suggest that the program has a fairly well-balanced and diverse set of members, and thus could have the capacity to offset military spouse underemployment and unemployment, which has been

attributed to geographic displacement, a mismatch between education level and jobs available, and the perception that employers will not hire military spouses (Maury and Stone, 2014).

Task 2. Assess the Types of Jobs Employer Partners Offer

While Task 1 provided a descriptive portrait of employers, the analyses were not suitable to allow us to examine whether the jobs available from these employer partners are meeting the needs of military spouses in general. Using a snapshot of job posting data from the program's career portal for one day (September 4, 2015), we documented the extent to which the Military Spouse Employment Partnership is offering military spouses the types of jobs that align with their educational credentials, experience, career fields of interest, or telework needs. (In the second stage of this project, we will analyze job postings for another date in spring 2016 to compare two points in time and in different seasons.)

We found that jobs available on the program's career portal were relatively well spread across the United States. In exploring the alignment between types of jobs posted on the career portal and the types of jobs that military spouses who used the portal were interested in, we found that more than half of the frequently searched keywords aligned with available job titles and job descriptions. We also found that education and experience requirements noted in job postings accord with the education and experience backgrounds of military spouses in general, who are typically less experienced or just starting their careers or who might not have many years of education. Almost half (46 percent) of 210,718 job postings included a phrase for years of experience. The most frequently stated experience levels were "six months or more," "one year or more," and "two years or more"—each occurred in 9.5 percent or more of job postings. Some mention of an educational degree level was made in 36 percent of job post descriptions. The most commonly sought degree was "bachelor's degree" (15 percent) followed by "high school diploma" (12.5 percent) and "associate's degree" (6 percent). Some mention of "license" or "certificate" was made in 19 percent of the job post descriptions.

These findings suggest that the program's career portal likely contains jobs that are appropriate for military spouses' education and experience levels and that fit with some known career fields searched for by military spouse users (i.e., sales and customer service). However, some career fields, such as education and software development, are not well represented in the career portal. This suggests that the potential mismatch in some career fields may limit the portal's effectiveness, which further research will examine.

RAND Will Continue to Analyze Program Strengths and Weaknesses

To determine the extent to which the Military Spouse Employment Partnership is serving the needs of military spouses and where the partnership might have opportunities to improve, RAND will conduct three other tasks in a second phase of research and will augment analyses to further inform Tasks 1 and 2.

- **Task 3. Analyze military spouse participants' perspectives on the program's utility and performance.** For this task, RAND will interview military spouse users of the program. Analyses have not been undertaken yet, but will explore whether the program enables military spouse participants to find employment commensurate with their educational or professional qualifications and whether military spouse participants attribute their current employment or wages to their participation in the program.

- **Task 4. Provide guidance on data and metrics that can support continued monitoring and evaluation.** To ensure that the Military Community and Family Policy office is able to conduct future evaluations of the Military Spouse Employment Partnership, RAND will assess the office's data collection efforts and provide guidance on what data collection systems or processes should be put in place so that an evaluation of spouses' outcomes can occur in the future.
- **Task 5. Provide recommendations to improve the Military Spouse Employment Partnership.** Based on the analyses of the previous four tasks, RAND will provide a set of suggested improvements to the program's processes, components, and policies, with the aim of enabling the program to support military spouses' employment, wages, and career satisfaction.

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The Need for an Evaluation of the Military Spouse Employment Partnership

Supporting the Well-Being of the Military Family

During conscription, the U.S. military tended to be a force of young, unmarried men (Kelty, Kleykamp, and Segal, 2010, p. 190). That changed after the United States replaced conscription with the current all-volunteer force (AVF) in 1973. Having a professional AVF has significantly increased the number of career service members. Compared with the military during conscription, today's AVF consists of soldiers from more diverse backgrounds, who are older, and who have families (Clever and Segal, 2013; Segal and Segal, 2004). In 2013, the Department of Defense reported that more than half (55.2 percent) of active-duty service members were married (U.S. Department of Defense, 2014, p. vii); in 2011, 726,500 spouses and more than 1.2 million dependent children lived in active-duty families (Clever and Segal, 2013). As such, the decision to enter, and to remain, in the military is often a family decision as opposed to an individual one.

The nature of military service places distinct demands on service members and their families, including the risk of death or injury, geographic moves, family separations, residence in foreign countries, and normative constraints on military families (Segal, 1986). Frequent relocations as military families move to new duty stations across the United States—and in some cases internationally—complicate military spouses' career trajectories (Booth, 2003; Booth, Falk, and Segal, 2000; Harrell, Lim, Weber, and Golinelli, 2004; Lim, Golinelli, and Cho, 2007).

Recognizing these challenges facing military families, President Obama directed the National Security Staff in May 2010 to develop a coordinated, federal government-wide approach to supporting military families (White House, 2011). The White House directive centered on strengthening military families, noting that “(t)he well-being of military families is an important indicator of the well-being of the overall force. At a time when America is at war and placing considerable, sustained demands on its troops and their families, it is especially important to address the family, home, and community challenges facing our all-volunteer force” (White House, 2011, p. 1).

Challenges Facing Military Spouses

Military spouses typically fall into the category of what demographers call tied migrants. A *tied migrant* is defined as an “individual whose family migrated but who would not have chosen

to move if single” (Cooke, 2013, p. 818). In the U.S. military, service members typically move every two to three years (e.g., permanent change of duty station [PCS]), often forcing their spouses and dependents to move with them. There is considerable evidence that these frequent moves have negative effects on the potential for spouses to find employment in occupations of their choosing, earn wages that match their skills, and maintain long-term careers (Harrell, Lim, Weber, and Golinelli, 2004; Lim and Schulker, 2010). For example, one study examined data from the U.S. Census Bureau and found that such forms of migration were associated with a 10-percent decline in employment for wives of military personnel (Cooke and Speirs, 2005). Military spouses are ten times more likely than civilian spouses to have moved across state lines in the last year (U.S. Department of the Treasury and U.S. Department of Defense, 2012).

Military Spouses’ Labor Force Experiences

Previous research has found that, compared with their civilian counterparts, military spouses are more likely to be unemployed (jobless, but actively seeking work) or underemployed (either working part-time involuntarily or having higher levels of education than what is required for their jobs) (Lim and Schulker, 2010; Maury and Stone, 2014). According to the 2012 American Community Survey (Maury and Stone, 2014), 18- to 24-year-old female spouses of active-duty service members had the highest unemployment rate at 30 percent (almost three times higher than the rate for their civilian counterparts, which was 11 percent). Female spouses between the ages 25 and 44 had the second highest unemployment rate, at 15 percent (almost three times higher than the rate for their civilian counterparts, which was 6 percent) (Maury and Stone, 2014). Further, according to analysis of the 2014 Deployment Life Survey, female spouses who are employed earn less than comparable civilian peers in terms of raw dollars and percentage earnings; also, military wives who are part of the labor force work as many hours as their civilian counterparts but still earn significantly less for that work (Meadows, Griffin, Karney, and Pollak, 2015).

Other surveys capture military spouses’ perspectives and experiences in the labor market, providing insights on why, from their point of view, they are experiencing unemployment or underemployment. For example, results from the 2012 Survey of Active Duty Spouses (2012 ADSS), which included a statistically weighted representative sample of military spouses, administered by the Defense Manpower and Data Center (DMDC) on behalf of the Under Secretary of Defense for Personnel and Readiness (DMDC, 2014), found that military spouses’ experiences in the labor market can vary by education level:

- Military spouses with fewer years of education reported higher unemployment rates than those with more schooling. Thirty-six percent of respondents with “no college” degree reported being unemployed, whereas 15 percent of respondents that had a graduate or professional degree reported being unemployed. (See Figure A.2 in Appendix A.)
- Military spouses with more years of education were more likely to be employed in their career field. (See Figure A.3 in Appendix A.)

The 2013 Military Spouse Employment Survey, administered by the Institute for Veterans and Military Families at Syracuse University to active-duty military wives (Maury and Stone, 2014), suggests that underemployment and unemployment among military spouses are the results of three key issues:

- **geographic displacement:** The highest cited reason for the 2013 Military Spouse Employment Survey respondents' having left a former employer for other employment opportunities is "PCS Moves/Relocations" (more than 33 percent) (Maury and Stone, 2014, p. 71, Table 60).
- **mismatch between education level and jobs available:** Roughly 40 percent of the 2013 Military Spouse Employment Survey respondents were reportedly "exactly" qualified in terms of the education requirements for their current/most recent job. Forty-five percent reported that they held an education level higher than the educational level required for their current/most recent job, and, thus, are overqualified for their current/most recent job. In that survey, the reason for not currently working cited most often by female respondents (more than 27 percent) was "I could not find work that matched my skills/education level" (Maury and Stone, 2014, p. 49). This was corroborated by results from the 2012 Military Family Lifestyle Survey, in which 92 percent of unemployed military spouse respondents cited "job market alignment" as a reason for not working, meaning that they were overqualified for local jobs or could not find a job in their field (Greentree et al., 2012).
- **perception that employers will not hire military spouses:** More than 58 percent of the 2013 Military Spouse Employment Survey respondents indicated that informing a prospective employer that they are a military spouse would make that employer less likely to hire them. More than 46 percent of the respondents indicated that they had been asked by a potential employer if they were a military spouse (Maury and Stone, 2014).

Demographic Characteristics of Military Spouses

While military spouses face a number of obstacles in pursuing employment, military spouses are demographically different from their civilian counterparts, which could have a compounding or varying effect on military spouses' ability to find and retain employment. As of 2013, 93 percent of spouses of active-duty service members were women; more than half of all military spouses (52.6 percent) are 30 years of age or younger (Department of Defense, 2014, p. 123). According to 2012 ADSS results, 70 percent of military spouses have children; most of their children (78 percent) are under the age of 12 (DMDC, 2013). According to the 2012 American Community Survey, active-duty military spouses are, on average, 33 years of age—compared with 47 years of age for civilian spouses—and are more likely to have children (18 and under) at home compared with their civilian counterparts (74 percent versus 59 percent) (Maury and Stone, 2014). Military wives are more likely than civilian wives to be racial or ethnic minorities (Harrell, Lim, Werber, and Golinelli, 2004, p. 13). Compared with the civilian population, African- and Asian-American wives are overrepresented across all services, whereas Latinas are underrepresented. Compared with civilian wives, military wives have higher levels of education—more likely to acquire a college education, to have graduated from high school, or have some college experience; 58 percent have an associate's or higher college degree or a vocational diploma. Additionally, only 1–2 percent of military spouses lack a high school diploma, far below the national average of 15 percent (Ryan and Siebens, 2012; DMDC, 2013). Further, civilian wives are twice as likely as military wives to have dropped out of high school (Harrell, Lim, Werber, and Golinelli, 2004, p. 15). Prior research has found that underemployment persists even after adjusting for demographic differences between military and civilian spouses; and, military spouses have lower labor force participation rates than demographically similar civilian spouses (Heaton and Krull, 2012, p. 7).

The Military Spouse Employment Partnership

In the 2011 White House directive, President Obama specifically prioritized developing career and educational opportunities for military spouses (White House, 2011). Helping spouses find employment and supporting the well-being of military families may be in the interest of force retention and readiness (Clever and Segal, 2013; Maury and Stone, 2014, p. 10). An interagency policy committee identified four priority areas to address the concerns and challenges of military families. The committee's report, *Strengthening our Military Families: Meeting America's Commitment* (White House, 2011), stated that one of the priorities was for a governmentwide commitment to

- Develop career and educational opportunities for military spouses,
 - By increasing opportunities for Federal careers;
 - By increasing opportunities for private-sector careers;
 - By increasing access to educational advancement;
 - By reducing barriers to employment and services due to different State policies and standards; and
 - By protecting the rights of service members and families. (White House, 2011, p. 2)

The report concluded by asserting that, “each commitment has associated metrics and will undergo recurring assessments” (White House, 2011, p. 23).

The White House directive ordered the Department of Defense to leverage the successful relationships created through the Army Spouse Employment Partnership, which had recruited 52 employer partners since its inception in 2003 to assist military spouses seeking private-sector careers, and expand the initiative to serve Navy, Marine Corps, and Air Force spouses (White House, 2011, p. 17). The Military Spouse Employment Partnership (which we will also refer to as the program) was launched on June 29, 2011.¹

The Military Spouse Employment Partnership is one of four initiatives under the Spouse Education and Career Opportunities (SECO) program, which together are intended to address the wide spectrum of employment issues confronted by military spouses. The SECO initiative, under the aegis of the Assistant Secretary of Defense for Readiness and Force Management's Military Community and Family Policy office,² is a portfolio of initiatives that facilitate career exploration opportunities; help spouses navigate application and hiring processes, as well as identify and fulfill the academic, licensing, or credentialing requirements tied to their career objectives; offer employment readiness assistance; and facilitate professional connections that could help military spouses in their careers (Military OneSource, 2015). These programs include the Military OneSource SECO Career Center that connects military spouses with certified career counselors at no cost, the My Career Advancement Account that provides tuition assistance for military spouses that can be used toward a degree or license in a portable career field (MyArmy-Benefits, 2015), and the Department of Defense State Liaison Office that facilitates cross-state endorsement of credentials and licenses and unemployment compensation eligibility.

¹ The program is distinct from the Military Spouse Preference program. The U.S. Congress established the latter under the Military Family Act of 1985 to provide preference in hiring eligible military spouses for civilian vacancies within the U.S. Department of Defense.

² The Military Community and Family Policy office's purpose is “empowering and supporting the military community and family to thrive” (Office of the Under Secretary for Personnel and Readiness, undated). This office is directly responsible for programs and policies centered on improving the quality of life for service members and their families.

The Imperative to Assess Programs That Support Education and Employment of Military Spouses

There have been various calls to evaluate Department of Defense programs that aim to support military spouses. In early 2012, Cost Assessment and Program Evaluation (CAPE) in the Office of the Secretary of Defense required that the Office of the Deputy Assistant Secretary of Defense for Military Community and Family Policy evaluate its military spouse programs. CAPE emphasized that evaluations should focus on the impact of the programs on users' lives rather than on the program processes. In December 2012, the U.S. Government Accountability Office recommended that the Department of Defense describe its overall strategy for how its programs should coordinate to help military spouse employment and improve its monitoring and evaluation of these programs (U.S. Government Accountability Office, 2012). In December 2014, the U.S. Congress mandated the evaluation of the Military Community and Family Policy office's Military Spouse Employment Partnership as part of the 2015 National Defense Authorization Act (PL 113-291, 2014). Within that law, Congress required the Secretary of Defense to "collect data to evaluate the effectiveness of the program in addressing underemployment of military spouses; matching military spouses' education and experience to available employment positions; and closing the wage gap between military spouses and their civilian counterparts" (PL 113-291, 2014, Sec. 568).

To date, there has not been a formal or independent assessment of the effectiveness of the program. The Military Community and Family Policy office has undertaken various efforts since 2011 to monitor and evaluate its SECO portfolio of programs. At that time, external evaluators concluded that the Military Spouse Employment Partnership was not yet ready for an evaluation: The programming was still nascent, undergoing policy changes, and incorporating new partners each year; also, data collection systems had to be put in place to allow for tracking of spouse outcomes through time.

Objectives of the Study

To meet the congressional mandate and complement ongoing efforts to monitor the progress of its SECO programs already under way, the Office of the Deputy Assistant Secretary of Defense for Military Community and Family Policy asked the RAND Corporation to provide guidance on data and metrics that should be collected to support an evaluation of the Military Spouse Employment Partnership's effectiveness and to evaluate the extent to which the program is (1) addressing unemployment and underemployment among military spouses; (2) matching military spouses' education and experience to available employment positions; and (3) closing the wage gap between military spouses and their civilian counterparts.

Research Questions and Data Sources

To meet the study's objectives, the project was organized into five tasks. This first stage of analysis for Tasks 1 and 2 took place from June through September 2015. A future report will summarize the results of the analyses conducted under all five tasks.

Task 1. Describe the Characteristics of Military Spouse Employment Partnership Partners

For this task, we analyzed data from the Military Community and Family Policy office Partner Directory and publicly available data in the LexisNexis® Company Dossier (2009), a proprietary database of information on 13 million companies, to create a descriptive portrait of partners. We asked four research questions to understand the range of employer partners that are members of the program and the extent to which employer partner characteristics align with types of employers that could best meet military spouses' unique needs and their interests:

- What types of industries are represented by the partners?
- Where are partners' headquarters located?
- What size are partners?
- Do partners offer telework opportunities?

Task 2. Assess the Types of Jobs Employer Partners Offer

To understand the extent to which the Military Spouse Employment Partnership is offering military spouses the types of jobs that align with their educational credentials, experience, career fields of interest, or reported telework needs, we utilized one day of job posting data from the program's career portal: September 4, 2015. We asked the following research questions:

- Where are jobs posted by employer partners on the program career portal located?
- What kind of jobs are available?
 - To what extent are a range of opportunities for military spouses available that fit their interests and needs?
 - To what extent is there alignment between the types of skills and positions employer partners are looking to fill, and the skills and interests of military spouses?

Task 3. Analyze Military Spouse Participants' Perspectives on the Program's Utility and Performance

To fully explore whether the Military Spouse Employment Partnership is serving the needs of military spouses, this task will rely on data from interviews with military spouse users of the program. The interviews conducted in this task will provide the answer to the following research questions:

- Is the program enabling military spouse users to find employment commensurate with their educational or professional qualifications?
- Do military spouse users of the program attribute their current employment or wages to their participation in the program?

Task 4. Provide Guidance on Data and Metrics That Can Support Continued Monitoring and Evaluation

To ensure that the Military Community and Family Policy office is able to conduct future evaluations of the Military Spouse Employment Partnership, RAND will assess the office's data collection efforts and provide guidance on what data collection systems or processes should be put in place so that an evaluation of the program can occur in the future. This type of evaluation of military spouse program users' employment or career outcomes would require quasi-experimental methods, which would include a counterfactual military spouse population that

had not had the opportunity to use the program, as well as longitudinal data that would follow military spouse users and nonusers through time.

Task 5. Provide Recommendations to Improve the Military Spouse Employment Partnership

Based on the analyses of the previous four tasks, RAND will provide a set of suggested improvements to the program's processes, components, and policies, with the aim of bolstering the program's abilities to support military spouses' employment, wages, and career satisfaction.

Organization of the Report

In the remainder of this report, we describe RAND's analysis to date in evaluating the Military Spouse Employer Partnership. The focus of this report is on Tasks 1 and 2. Final results of the evaluation and all tasks will be presented in a subsequent report.

Chapter Two describes the components of the program in more detail, including the characteristics of the partners that had joined the program as of July 2015. Chapter Three summarizes RAND's analysis of the extent to which jobs posted by employer partners on the program's career portal align with the education level and types of jobs that military spouses are typically searching for. Chapter Four concludes with a summary of RAND's findings to date and next steps for the evaluation. Appendix A documents 2012 ADSS results highlighted in Chapter One. Appendix B provides more methodological background for the results presented in Chapter Three.

Description of the Military Spouse Employment Partnership

Introduction

The Military Spouse Employment Partnership is a *targeted recruitment and employment tool that serves military spouses and companies that are seeking to hire them* (Military Spouse Employment Partnership [MSEP], 2014f). Its explicit goal is to improve employment and career opportunities for spouses of active-duty and reserve component members across each of the service branches. It does this by partnering with employers from a wide range of establishments from private, public, and nonprofit sectors that have committed to support the employment of military spouses.¹ The program also has a Spouse Ambassador Network, which is a set of organizations that have established networks of potential employers, former and current military spouses, veterans, and current service members, and that operate through local and national, community-based networks to better serve military spouses' needs in the places where they live and work (MSEP, undated; MSEP, 2014d). The program operates and continuously updates an Internet-based portal where its institutional partners post job opportunities, and military spouses can search for jobs based on different criteria of their choosing.

This chapter first describes the components of the program, based on information provided by staff members of the Military Community and Family Policy office, a review of the program materials available online, and interviews with the ten civilian contract staff who support the partnership: seven *account managers*, one *Military Spouse Employment Partnership potential partner specialist*, one *operations supervisor*, and one *Military Spouse Employment Partnership lead*. In the second section, we present our findings from Task 1 (Describe the Characteristics of Military Spouse Employment Partnership Partners). The analysis is based on information collected by the Military Community and Family Policy office staff on the partners and publicly available data from LexisNexis®. We highlight partner differences by industry type, number of employees, geographic dispersion, and whether the partner offers opportunities for telework.

¹ The most up-to-date list of partners can be found on the All Partners page of the Military Spouse Employment Partnership Career Portal website (2014a). Except for employers that are part of the U.S. Department of Defense (e.g., the U.S. Air Force), employer partners do *not* agree to give preference in the hiring of military spouses. These non-Department of Defense employer partners agree to advertise job opportunities that could match the education and experience levels of military spouses (PL 113-291, 2015).

Components of the Military Spouse Employment Partnership

The program has three core components: activities to support partners and military spouses; oversight and management; and expectations of membership and commitments agreed upon by the partners themselves.

Activities and Supports Provided to Partners and Participating Military Spouses

To support its goals, the program provides multiple supports and activities for partners and participating military spouses via different mechanisms (e.g., Internet-based, in person, over the phone). Partners have access to a series of online *Military Spouse Employment Partnership support services*, which include

- the Military Spouse Employment Partnership career web portal (2014c)
- a New Partner Orientation Program
- program-related webinars
- email access to program account managers for follow-up contact
- access to the Military Spouse Employment Partnership Partner Group on LinkedIn
- toolkits and information on best practices for partners
- a help desk for technical support on the Military Spouse Employment Partnership career web portal.

Military spouses who have registered on the SECO website have access to

- the MySECO web portal and help desk for support
- individualized career counseling, with phone and email access to Spouse Education and Career Opportunities counselors for follow-up contact
- access to the My Career Advancement Account scholarship web portal for eligible military spouses
- the Military Spouse Employment Partnership career web portal (2014c)
- continuous updates and resources tied to the program that are shared via social media platforms (e.g., content on Facebook, Twitter).

The Military Spouse Employment Partnership career web portal (2014c) is an online platform where employer partners can post open positions. It offers search tools that enable employer partners to sort through participating military spouses and target their outreach based on specific criteria (e.g., requisite skills, licenses). At the same time, the portal affords military spouses valuable access to job opportunities and partner employers who have committed to supporting employment among military spouses. Through the career portal, military spouses can search for opportunities and open positions based on criteria of their choosing, and ultimately apply for the positions via the employer partner.

Management and Oversight Operations

To cultivate and sustain cooperation between employer partners and military spouses, Military Community and Family Policy staff undertake a number of internal operations to monitor and oversee the program's activities and efforts. As the program involves a wide spectrum of stakeholders, and as the volume of employer partners and military spouses engaged with the

program has steadily grown since its inception, the program's internal operations have become increasingly important.

Approve Partner Application

Eligibility for participation in the program is based on the following criteria. A checklist is available online for partner applicants to review (MSEP, 2014b).

The company should have

- a minimum of five years of sound business experience with a good track record, broad diversity efforts, and financial stability
- facilities located in more than one state or region
- a satisfactory ranking with Dun and Bradstreet credit reporting.

The company agrees to

- not engage in activities that would discredit the program
- not charge military spouses any fees or costs associated with employment opportunities offered.

The company should have available jobs that

- are compatible with spouse career interests, portable, located at or near military installations
- have flexible work options (e.g., virtual work, flexible hours/location, part-time)
- offer career progression (e.g., entry level to senior management positions)
- provide benefits, training opportunities, and assistance with credentialing.

Applying partners can determine whether their organization has met these criteria. Once the applying partner determines that the organization meets the eligibility requirements, the applicant checks a box and completes the remainder of the online application, which requires that a point of contact be provided as well as the contact information and agreement from a vice president-level representative. Other pertinent information about the company is also asked, such as selecting a primary and secondary industry in which the employer reports the company belongs, why the company would like to join the program, and whether the company has any ongoing efforts or initiatives to support military spouses (MSEP, 2014b).

The application then goes through a five-step vetting process.

1. The application is reviewed by Military Community and Family Policy staff members and the Military Spouse Employment Partnership potential partner specialist (who is a civilian contractor). The potential partner specialist conducts additional research on the company, including a prescreening interview.
2. The potential partner specialist presents the application package, including the prescreening interview results, to Military Community and Family Policy staff for consideration.
3. Military Community and Family Policy staff members conduct a phone interview with the potential partner and the potential partner specialist.

4. Military Community and Family Policy staff, with representatives from the Services, review the complete application package and make a membership acceptance recommendation to the Deputy Assistant Secretary of Defense for Military Community and Family Policy.
5. Once accepted for membership, new partners must provide additional information, such as their logo, as well as sign a Statement of Support.

According to Military Community and Family Policy office staff, potential new partners learn about the program through various channels, including word of mouth at hiring fairs; industry meetings; interaction with fellow employers who have worked with service members, veterans, or their families; communication with other partners; and interaction with the Department of Defense. Potential new partners may submit applications throughout the year. There is a cutoff date that determines the cohort year that the new partner will fall within (i.e., in 2015, potential new partners that applied before July 17, 2015, were included in the Induction Ceremony in October 2015).

Convene Partners on a Regular Basis

Once a partner's application for membership has been approved, new partners officially join the program at the induction ceremony, held in the fall of each year. The annual ceremony for new partners is scheduled to coincide with an annual partner meeting. Program staff members also offer opportunities for partners to meet with each other quarterly over the phone.

Assign an Account Manager to Each Partner

Upon acceptance into the program, each partner is assigned an account manager; accordingly, each partner appoints a point of contact (POC) who will serve as the liaison between the partner and the designated account manager. Account managers are assigned partners based on the primary industry that the partner identifies in its program application, and each account manager is assigned to 35 to 40 partners. The account manager and the partner POC have standing monthly meetings, and often connect via phone calls and emails in between the monthly meetings.² There is no set agenda at each meeting. Discussions at these meetings include such topics as reviewing any hiring needs of the employer or upcoming hiring events; POCs update the account managers on the past month's activities related to military spouses and recent success stories or testimonials that could be shared with other account managers. Account managers emphasize the importance of hiring military spouses and the impact of the partner's efforts, and they exchange information on upcoming events or initiatives that relate to military spouses in each monthly call. They also keep track of all interactions with the employer partners within their respective portfolios and are required to enter notes on all electronic correspondence, telephone calls, and in-person meetings into a database.

Account managers are also responsible for connecting with Family Readiness staff on installations in an assigned geographic region, both within the United States and internationally, so staff can market the Military Spouse Employment Partnership, its resources, and any initiatives or job fairs that partners are undertaking, as well as develop local relationships with military families, with the community on and around the base, and with potential employers so as to expand participation in the initiative. Account managers are assigned between 30 and 40 installations.

² Program staff authorized 19 partners to speak with their respective account managers at quarterly intervals. Program staff grant this option to partners on a case-by-case basis.

Data Collection and Monitoring

Military Community and Family Policy office staff members collect data on each partner as a means of monitoring the wide spectrum of stakeholders, tracking their engagement with the program over time, and their level of satisfaction. Program staff gather more-basic data (e.g., location of headquarters, number of employees) when partners first join the program and simply verify the information for the Partner Directory throughout the year, but program staff also collect data on partners' participation and satisfaction on a recurring basis.

Partner Characteristics

Staff collect and track information on each partner in the Partner Directory, which contains extensive self-reported information on about 50 indicators, including the organization's primary industry sector, the type of occupational roles it offers, the number of employees, and the geographic reach of its facilities. Program staff also include the partner's induction date and a brief description of the organization. This information is also stored in an internal account management system alongside any information from email or telephone contacts that program staff have with the partner, account managers' comments from the monthly check-in meetings, and any other interactions between account managers and partner POCs (whether via email or over the telephone).

Spouse Hiring Data

While partners are not required to hire a specific number of spouses each month, they do commit to reporting to the Military Community and Family Policy office about the number of military spouses that are hired each month and from which service the spouse's sponsoring service member is in. In total, about 40 percent of employer partners provide program staff with this information.

Partner Engagement

In addition to collecting partners' characteristics, program staff also track the extent to which partners are connecting with the program. A few indicators are used to determine the "health" of the relationship between the partner and the program: whether the partner POC is meeting with his or her designated account manager monthly, attendance at quarterly conference calls, and attendance at any requested events or job fairs. If a partner has not connected with the account manager within 45 days, they are flagged, and a member of the program staff reaches out to the POC to determine why there has not been contact. These data points together inform the program staff's assessment of a partner's *engagement* in the Military Spouse Employment Partnership.

Partner Satisfaction with the Program

In the interest of continuous improvement and quality assurance, partner POCs can voluntarily complete an anonymous Customer Feedback Questionnaire, fielded via email after any interaction with their account managers. The questionnaire gauges partner POCs' satisfaction with their respective account managers and provides an opportunity for POCs to offer general feedback on the Military Spouse Employment Partnership, voice concerns about the quality of the service they are provided, and highlight areas that they feel are in need of improvement.³ A

³ Program staff members also have plans to field a quarterly questionnaire to all partner POCs to capture their levels of satisfaction with the program. Questions on the quarterly questionnaire would overlap to some degree with the customer feedback questionnaire but would focus on more-general program components, rather than on the level of satisfaction with the services provided by the account managers.

toll-free number is also available that partner POCs and military spouses can use to offer feedback or ask questions. With respect to the military installations, the Family Readiness offices at all installations are called quarterly to discuss feedback on the program and their appointed account manager; personnel can also send feedback via email. The aggregated data collected through an anonymous questionnaire are shared in monthly reports with the Military Community and Family Policy office.

Military Spouse Users' Satisfaction with the Program

Program staff also collect information on the level of satisfaction that spouse participants have with the program. Upon use of any of the online services and after connecting with a career counselor, military spouses are offered the opportunity to voluntarily complete an anonymous Customer Feedback Questionnaire. The questionnaire asks participating military spouses to assess their interactions with the program personnel (e.g., career counselors), with employer partners, and with the web-based services provided by the program.

Expectations and Responsibilities of Employer Partners

The essential responsibility of employer partners is to support military spouse employment. Simply stated, this means recruiting, hiring, promoting, and retaining military spouses (MSEP, 2013). Upon completion of the application and vetting process, the newly inducted employer partners sign a formal "Statement of Support," (MSEP, 2013) thereby committing to: (1) increasing employment opportunities for military spouses, and helping them remain employed if and when they relocate; (2) ensuring that military spouses receive pay that is equal to their civilian counterparts; and (3) striving to provide high-performing military spouses with opportunities for career advancement.

Though staff of the Military Spouse Employment Partnership allow for case-by-case exceptions to the standard expectations set for their stakeholders as articulated on the "Partner Commitments and Expectations" sheet (e.g., authorizing certain partners to join calls on a quarterly basis as opposed to a monthly one), there are formal expectations of employer partners that exceed the explicit hiring-related expectations. We briefly describe these additional expectations.

Connect with Fellow Employer Partners and Support New Employer Partners Joining the Program

Existing partners are expected to mentor new partners and are encouraged to share with them the best practices for engaging with and supporting military spouses (MSEP, 2013). Additionally, partners are encouraged to network with one another—for example, through military-specific job fairs and the LinkedIn Partners group.

Participate in Programwide Events and Activities

Partners are expected to participate in such events as the New Partner Orientation, the Annual Partner Meeting, and the New Partner Signing and Induction Ceremony.

Connect with Military Spouses Through the Web-Based Career Portal

Partners are able to post available jobs to the career portal, which military spouses can then search. Instructions are provided in a 14-page New Partner Guide (MSEP, 2014e). Each company has two options to post jobs: Partners can submit a direct job feed to the program's information technology vendor so jobs posted on the career portal connect directly to the compa-

ny's job board URL, or jobs can be posted manually. Job postings may include the following information, though the precise information included in each job posting varies:

- number of positions available
- industry (e.g., finance, health care, retail, staffing, technology)
- location: where work will be completed (e.g., corporate office, virtual, or telework)
- address: street, city, state, postal code, country
- job type: full-time, part-time, internship, flex time, telework, or seasonal
- career level: none, student (high school), student (undergraduate/graduate), entry-level, experience (nonmanager), manager (manager, supervisor of staff), executive (senior vice president, vice president, department head, etc.), or senior executive (president, chief financial officer, etc.)
- hourly or salaried
- hourly wage (if applicable)
- salary (if applicable)
- benefits: 401k, stock options, health insurance, dental insurance, life insurance, tuition assistance, and/or financial assistance
- description: overview of job requirements, duties, and responsibilities
- external link: link to individual job posting on the partner website or careers page on the partner web site
- requirements
 - years of experience
 - education
 - minimum qualifications
 - additional preferred qualifications.

Track Spouse Hires Monthly

As a means of measuring the progress and outcomes of the partnership to ensure that it is meeting its objectives, the Military Spouse Employment Partnership requires employer partners to report hiring data on a monthly basis. Employer partners are expected to submit a report indicating

- the number of spouses currently employed (total number of military spouses employed with the company for the current reporting period, including the total number of spouses hired since the previous month), by Service (Army, Navy, Air Force, Marine Corps, Coast Guard)
- the total number of spouses hired since the previous month, by Service
- the number of spouses hired in part-time, full-time, or virtual roles
- the number of spouses experiencing a relocation, who the company retained
- the number of spouses promoted
- how many times the company referred a military spouse experiencing a relocation to another company or similar employment opportunity (MSEP, 2013; MSEP, 2014e, p. 10).

According to the Partner Directory and monthly hiring reports, approximately 24 percent of the 2014 cohort of employer partners submitted hiring reports between October 2013 and May 2015. Twenty-seven employers who were inducted as partners in 2014 or earlier had not

submitted any hiring reports. Of the 2013 cohort, 34 percent have submitted hiring reports since their induction. That same figure, 34 percent, applies to the employers that entered the program between 2003 and 2012. The data indicate that larger employer partners are more likely to provide hiring reports, with 71 percent of employers with a staff size of 26,300 or more submitting hiring reports, and only 45 percent of employers with a staff size of 50 or fewer submitting hiring reports.⁴

Expectations and Responsibilities of Spouse Ambassador Network Partners

The Spouse Ambassador Network is currently composed of 16 nonprofit and nongovernmental organizations. Whereas employer partners are focused more narrowly on connecting military spouses with specific job opportunities and supporting their employment, the Spouse Ambassador Network partners serve a broader purpose “to educate, empower, and mentor military spouses to encourage career fulfillment by promoting and sharing resources while facilitating effective relationships with local and national stakeholders” (MSEP, 2014d; MSEP, undated). The Spouse Ambassador Network participants are expected to raise awareness of the challenges related to military spouse employment, inform military spouses of the different resources that are available to them through the U.S. Department of Defense and Military Community and Family Policy office, facilitate cooperation across the many different stakeholders interested in supporting military spouses’ employment, and leverage their own networks and resources in support of military spouses’ employment.

Like the employer partners, the organizations in the Spouse Ambassador Network are assigned to account managers with whom they correspond on a monthly basis, and they are included in the Partner Directory. However, as their primary role is not centered on hiring military spouses but supporting them through other means, they are not expected to provide hiring data, though many of them do so.

Characteristics of Partners

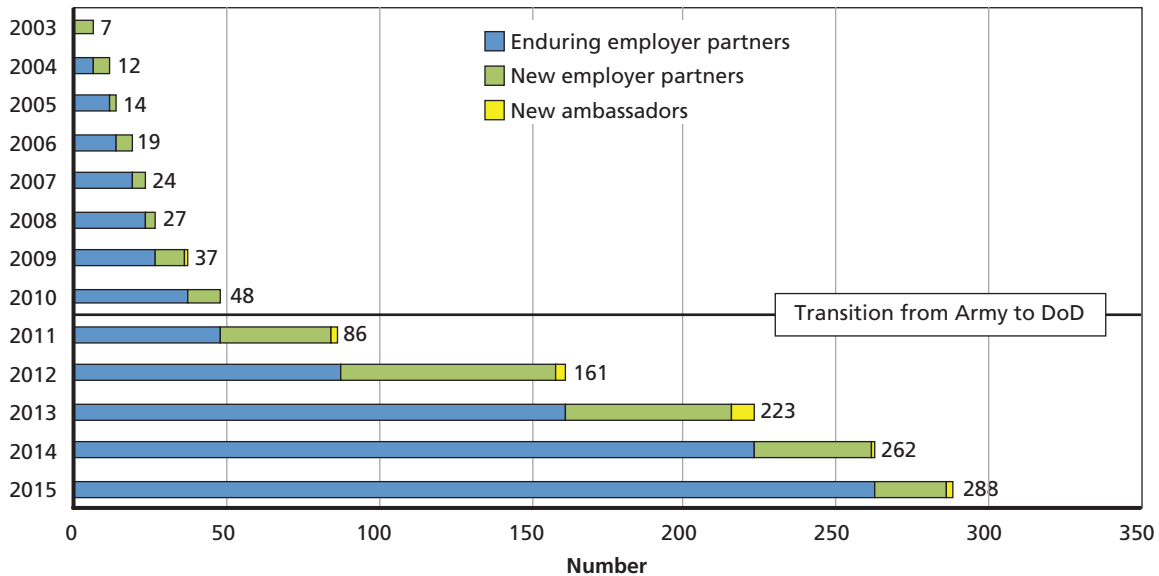
As of July 28, 2015, the Military Spouse Employment Partnership had 288 organization members. Of these 288 partners, 16 were members of the Spouse Ambassador Network and the remaining 272 were employer partners. The program has continued to experience growth in the number of partners, as illustrated in Figure 2.1.

Figure 2.1 displays the cumulative frequency of new employer and Spouse Ambassador partners (partners that joined in a given calendar year) as well as enduring partners (both types of partners that continued from the previous calendar years) by year.⁵ The line at 2011 indicates when the Department of Defense began to manage the program. In 2003, the program began with seven partners. It is notable that the program experienced growth from 2003 to 2010,

⁴ Given the inconsistent and low response rates, we did not analyze these hiring reports. Subsequent research for this study will include an analysis of interviews with a purposefully selected sample of partners to understand the obstacles they face in reporting hiring data to the Department of Defense.

⁵ Figure 2.1 only includes partners that were part of the program as of July 28, 2015. It does not show partners that started in a particular year and then left this program, or that left and then returned. Further, the start dates for two employer partners (Concentra Inc. and Care.com) were missing in the Partner Directory. Based on publicly available information, we estimate that the induction dates for these two employer partners were sometime during or before 2011 (Joining Forces, 2012). Figure 2.1 represents these two partners as enduring partners beginning in 2012.

Figure 2.1
Number of Military Spouse Employment Partnership Partners by Year



SOURCE: Military Community and Family Policy office Partner Directory, 2015.

RAND RR1349-2.1

when it was run by the U.S. Army. In 2010, there were 48 enduring partners in this program. That is a 586-percent change between 2003 and 2010.⁶ The program experienced consistent and rapid growth from 2011 to 2015, when it was a Department of Defense–wide program. Between 2010 and 2011—the first year of this program’s expansion—there was a 79-percent increase in the number of enduring employer partners that joined this program,⁷ as well as a 235-percent increase in the number of partners between 2011 and July 2015.⁸

Data Sources

RAND compiled data on 288 organizations using the roster of partners as of July 28, 2015. To describe the Spouse Ambassador Network partners, RAND relied on information in the Partner Directory as well as each partner’s website. To describe the employer partners, RAND relied on three sources: the Partner Directory, data on the number of spouses hired supplied by employer partners to account managers, and publicly available data from LexisNexis® Company Dossier (2009), a proprietary database of information on 13 million companies. We

⁶ We calculated this number by subtracting the total number of enduring partners in 2010 from this total in 2003 ($48 - 7 = 41$). We then divided this difference by the total number of partners in 2010 ($41 / 7 = 5.86$). The percentage is this product multiplied by 100 to get 586 percent.

⁷ We calculated this number by subtracting the total number of partners in 2011 from this total in 2010 ($86 - 48 = 38$). We then divided this difference by the total number of enduring partners in 2010 ($38 / 48 = .79$). The percentage is this product multiplied by 100 to get 79 percent.

⁸ We calculated this number by subtracting the total number of partners as of July 2015 from this total in 2011 ($288 - 86 = 202$). We then divided this difference by the total number of partners in 2011 ($202 / 86 = 2.35$). We then multiplied this product by 100 to get 235 percent.

imputed missing data for 44 employer partners using a variety of publicly available sources,⁹ including companies' marketing materials (e.g., official reports located on company websites or company websites themselves), corporate filings with the U.S. Securities and Exchange Commission (e.g., Form 10-K), and other business-related databases and websites (e.g., Manta.com or LinkedIn.com).

Description of Spouse Ambassador Network Partners

Spouse Ambassador Network partners are organizations that provide a range of services in support of military spouse employment. For example, some of these organizations (e.g., the Military Spouse Foundation) provide workshops and mentoring, while other partners offer staffing services (e.g., Easter Seals Veteran Staffing Network). Some of these partners organize support communities for military spouses via their local chapters (e.g., Blue Star Families); one organization—Victory Media's *Military Spouse* magazine—holds an annual luncheon where they present a Military Spouse of the Year award. We describe the members of the Spouse Ambassador Network in more detail.

Professional Military Support Organizations

- **The Air Force Association** is an independent, nonpartisan, and nonprofit organization that was founded in 1946 to promote the U.S. Air Force. During the annual Air and Space Conference, the Air Force Association organizes a Spouse and Family Forum to discuss issues of concern for military families (Air Force Association, 2014, p. 14).
- **The Association of the United States Army** is a private, nonprofit organization that advances the interests of personnel serving in the U.S. Army. Specifically, it advocates for funding initiatives and programs that support families of Army personnel, including education and employment opportunities of spouses (Association of the United States Army, 2015).
- **The Military Officers Association of America** is a nonprofit organization that was founded in 1929 and advocates on behalf of service members and their families. The organization reports a membership of more than 370,000 (Military Officers Association of America, 2015).
- **The Navy League of the United States** is a nonprofit organization that was founded in 1902 to advocate on behalf of members of the sea services (U.S. Navy, U.S. Marine Corps, U.S. Coast Guard, and U.S.-flag Merchant Marine) and their families. The Navy League reports a membership of 40,000 civilians across more than 240 councils (Navy League of the United States, 2015).

⁹ Data may have been missing for two reasons. One was the July 28, 2015, cutoff date for inclusion of partners in the analyses. Thus, partners who left the program prior to this date still may have been in the Partner Directory but not active members. Second, some partners had changed names because of mergers with other organizations or restructuring. Unsurprisingly, information on employer characteristics often changes as employer partners merge with other companies or reorganize their operating units. For example, AECOM Technology Corporation is an engineering firm and employer partner. According to this company's press release, AECOM completed its acquisition of URS Corporation in October 2014 (AECOM Technology Corporation, 2014). Thus, data on the number of employees, geographic reach of offices, and revenue is likely to differ before and after 2014 for this partner.

Philanthropic Foundations

- **The Military Spouse Foundation** is a nonprofit organization founded in 1991 that coordinates career-related workshops, individual mentoring, and online communities for military spouses (Military Spouse Foundation, 2015).
- **The U.S Chamber of Commerce Foundation** is a nonprofit organization that runs the Hiring our Heroes program. This program connects veterans, transitioning service members, and military spouses with employment opportunities, and it organizes receptions, hiring events, and other network opportunities for military spouses and employers. In 2014, this program reported hosting 29 receptions and hiring events across the United States that connected 4,453 spouses with 561 employers (U.S. Chamber of Commerce Foundation, 2015, p. 9).

Mentoring Programs

- **The Military Spouse eMentor Program** is a partnership between two nonprofit initiatives: AcademyWomen and the U.S. Chamber of Commerce's Hiring our Heroes. This partnership runs an online program where spouses and widows of service members can search for jobs and receive career guidance and general support from a community of military spouses (Military Spouse eMentor Program, undated).

Media Outreach

- ***Military Spouse Magazine***. Victory Media's *Military Spouse* magazine has honored military spouses of all ranks and branches since 2008 with their Military Spouse of the Year award. This award recognizes the contributions of military spouses by soliciting nominations from members of the military community. Those elected by the community to receive this award are honored at a luncheon in Washington, D.C. each year (Military Spouse of the Year Award, 2015).

Employment Support Organizations

- **In Gear Career** is a nonprofit organization that organizes local professional development chapters for career-focused spouses of service members. The organization focuses on providing free career resources to military spouses and advocates on behalf of their professional interests (In Gear Career, undated).
- **The Military Spouse Corporation Career Network** is a nonprofit organization that was chartered in 2004 to provide employment support for service members and their spouses. The organization reports helping more than a thousand military-affiliated applications find employment in 2014 (Corporate America Supports You, 2015, p. 11).
- **The Military Spouse JD Network** is a nonprofit organization formed in 2011 to advocate the licensing of military spouses who are attorneys, address the challenges of career-oriented spouses and families, and promote the hiring of military spouses. The organization operates a network of military spouses who are former and current practicing attorneys (Military Spouse JD Network, 2015).
- **The Rosie Network** is a nonprofit organization that was founded by military spouses to promote businesses owned by military families. The organization promotes these busi-

nesses on their websites and sponsors networking seminars for members of the business community (Rosie Network, 2015).

Family Support Organizations

- **Blue Star Families** is a nonprofit organization established in 2009 to empower and support military families. The organization reports that it serves 1.5 million military families annually with 47 chapters in the United States and foreign countries (Blue Star Families, 2015, p. 4).
- **Easter Seals Veteran Staffing Network** is a nonprofit organization that supports children and adults with disabilities. The Veterans Staffing Network is a staffing agency operated by Easter Seals that caters to veterans by providing them opportunities for employment in private industry (Veteran Staffing Network, 2013).
- **The National Military Family Association** is a nonprofit organization founded in 1969 to advocate on behalf of families of service members. The organization offers scholarships to military spouses, camps for children of service members, and retreats for military families (National Military Family Association, 2014, p. 2).
- **The Tragedy Assistance Program for Survivors** is a charitable corporation that offers programs to support those grieving the death of someone who served in the military (Tragedy Assistance Program for Survivors, 2015).

Description of Employer Partners

In this section, we describe employer partners' industry type, number of employees, geographic dispersion, and opportunities for telework. We selected these characteristics based on the goals of the Military Spouse Employment Partnership to provide long-term career opportunities for spouses of service members who tend to be geographically mobile.

Industry Type

Research has identified an hourly wage gap for military wives (Lim, Golinelli, and Cho, 2007, p. 36; Meadows, Griffin, Karney, and Pollak, 2015), who represent 92.7 percent of all spouses of active-duty personnel (U.S. Department of Defense, 2014, p. 123). Further, results from the 2013 Military Spouse Employment Survey (Maury and Stone, 2014) show differences in self-reported average gross income of wives working in a preferred versus nonpreferred career (Maury and Stone, 2014). For example, this survey found that wives working in the health care field (e.g., nurses, dental hygienists, or pharmacy technicians) and who preferred working in this field earned \$17,930 more than spouses working in this field who reported it was not their first choice (Maury and Stone, 2014, p. 40). Thus, it could be preferable for the Military Spouse Employment Partnership to include employer partners in industries that match those in demand by military spouses. We therefore explored the distribution of industries in detail using data available from LexisNexis®.

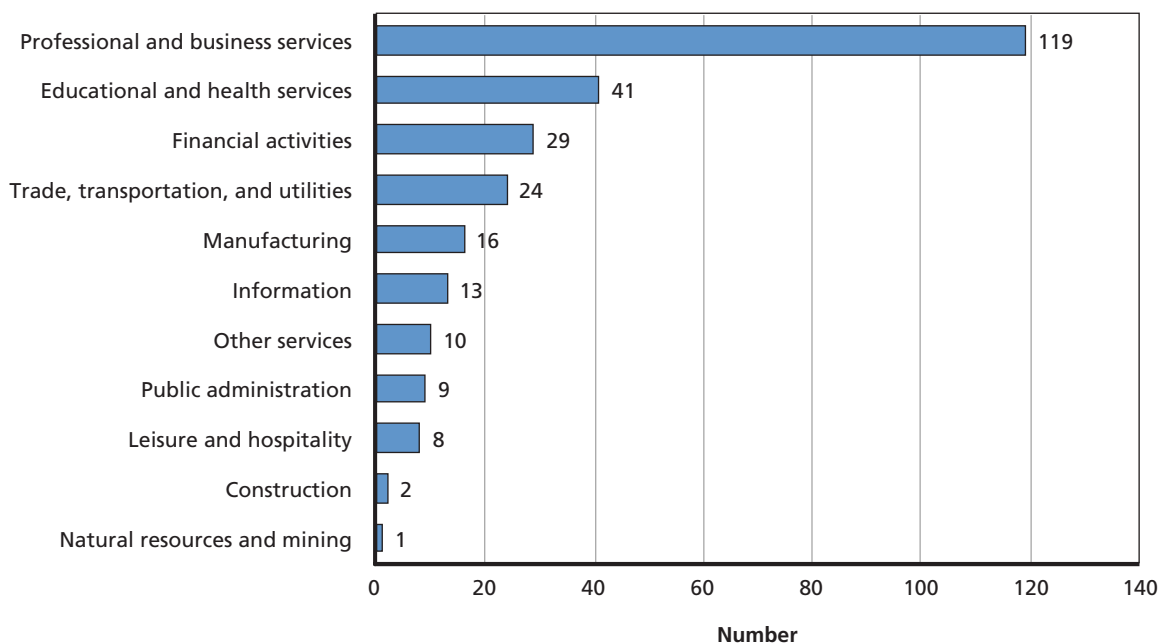
For most partners, the LexisNexis® database included a six-digit code from the 2012 North American Industry Classification System (NAICS).¹⁰ The Office of Management and Budget established this standard for classifying businesses by industries within the U.S. econ-

¹⁰ According to the Bureau of Labor Statistics (2014), "NAICS uses a production-oriented conceptual framework to group establishments into industries based on the activity in which they are primarily engaged." These codes differ from the Standard Occupation Classification system that classifies employees into occupational categories.

omy (U.S. Census Bureau, 2015a). The first two digits of these NAICS codes represent 20 distinct sectors of the U.S. economy. Based on these sectors, we classified each employer partner into one of these 20 NAICS sectors. The U.S. Department of Labor classified NAICS sectors into ten supersectors, excluding public administrative organizations (Bureau of Labor Statistics, 2015). We added a separate category for these public-sector employer partners to create 11 supersector categories. Figure 2.2 displays the average distribution of these supersectors.

Figure 2.2 shows that 189, or close to 70 percent, of employer partners were from one of three supersectors: professional and business services, educational and health services, or financial activities. While not a perfect comparison, results from the 2013 Military Spouse Employment Survey (Maury and Stone, 2014) suggest that the program's employer partners' industries represented the types of career fields of interest to military spouses: survey respondents' self-reported top career fields were government employment, education, health care, and financial and business services.¹¹

Figure 2.2
Employer Partners by NAICS Supersector



SOURCE: LexisNexis® Company Dossier, 2009.

NOTE: This includes each of the NAICS supersector categories and a separate category for government entities, labeled "public administration."

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¹¹ There are three important caveats to note when making comparisons between the distribution of employer partners by NAICS supersector and the 2013 Military Spouse Employment Survey. First, this survey's sample is restricted to wives of active-duty personnel and does not use NAICS supersector codes in tabulating its results. Second, data on the total number of observations in a career field were 1,037, which is 50.4 percent of the sample. Thus, the survey results may not be a representative distribution of career fields for military spouses. Third, the NAICS supersector of "professional and business services" is likely to represent a cross-section of career fields used in this survey (i.e., our results separate "professional and business services" from "financial activities," whereas the survey has a single career field category of "financial and business services").

Number of Employees

By design, the program tends to include large employer partners, for two reasons: They tend to hire more people than smaller organizations, and they may have offices in more cities and states than smaller employers. That means employers may have more opportunities to allow military spouses to transfer within the firm when they have to move to a new duty station. We constructed two measures of employer partner size to estimate the potential for these types of opportunities. The first measure is the number of people employed by these employer partners. We used three sources of data to construct this measure of employer size. The first was data from the Partner Directory, which contained a self-reported number of employees. For any employer partners that did not have this information in the Partner Directory, we searched the LexisNexis® Company Dossier (2009). If the number of employees was not available there, we looked directly at company websites.

Employer partners ranged in size from one employee to 2.2 million employees. Seventy-eight percent of the employer partners employed 100 people or more; 3 percent (or nine) employer partners employed fewer than ten people. (These nine partners were primarily staffing agencies, which tend to help military spouses find employment but do not have a large number of staff.)

Table 2.1 displays the quartiles for the number of people employed by employer partners. This table shows that 25 percent of the firms employed 100 or fewer people, the median value was 2,700 employees, and the top 25 percent of firms employed 24,000 or more people. We imputed missing data for 44 employer partners using a variety of publicly available sources, including companies' marketing materials (e.g., official reports located on company websites or company websites themselves), corporate filings with the U.S. Securities and Exchange Commission (e.g., Form 10-K), and other business-related databases and websites (e.g., Manta.com or LinkedIn.com).

Geographic Reach

We also measured the geographic reach of the Military Spouse Employment Partnership employer partners. The program allows employer partners to self-report their geographic dispersion:¹² *international presence*, defined as partners with facilities located outside the United States, *national presence*, defined as partners with facilities that span multiple regions within the United States, *regional presence*, defined as partners with facilities that are located within a single region, and *virtual presence*, defined as partners with telework or virtual opportunities. These categories are not mutually exclusive. Figure 2.3 displays the distribution of geographic dispersion for employer partners in the sample. There were 135 partners that reported having

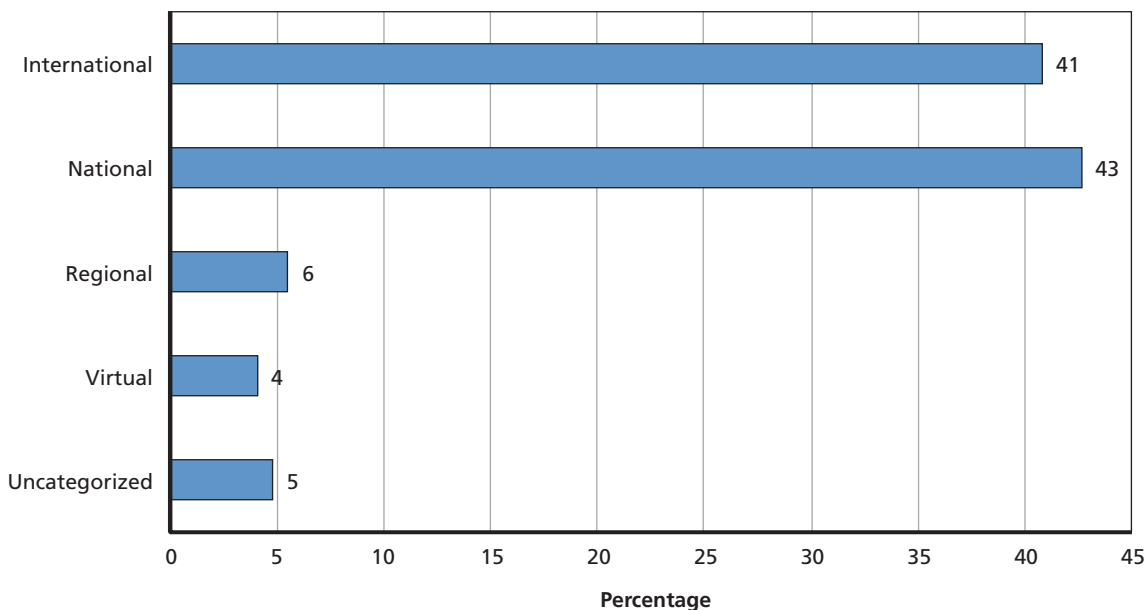
Table 2.1
Number of People Employed by Employer Partners by Quartile

	Number of Employees
First quartile (25th percentile)	100
Median value (50th percentile)	2,700
Highest quartile (75th percentile)	24,700

SOURCES: MSEP, 2015; LexisNexis®, 2009; publicly available online reports and databases.

¹² The definitions of these geographic reach categories could be open to interpretation by each of the employer partners.

Figure 2.3
Employer Partners Reported Geographic Reach



SOURCE: MSEP, 2015.

NOTES: N = 272. Categories are not mutually exclusive: partners can select more than one. "Uncategorized" (N = 13) denotes partners who did not complete the information.

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international facilities and 119 that reported having facilities across the United States. Eleven companies (or 4 percent) reported having "virtual" facilities.

Geographic Location of Headquarters

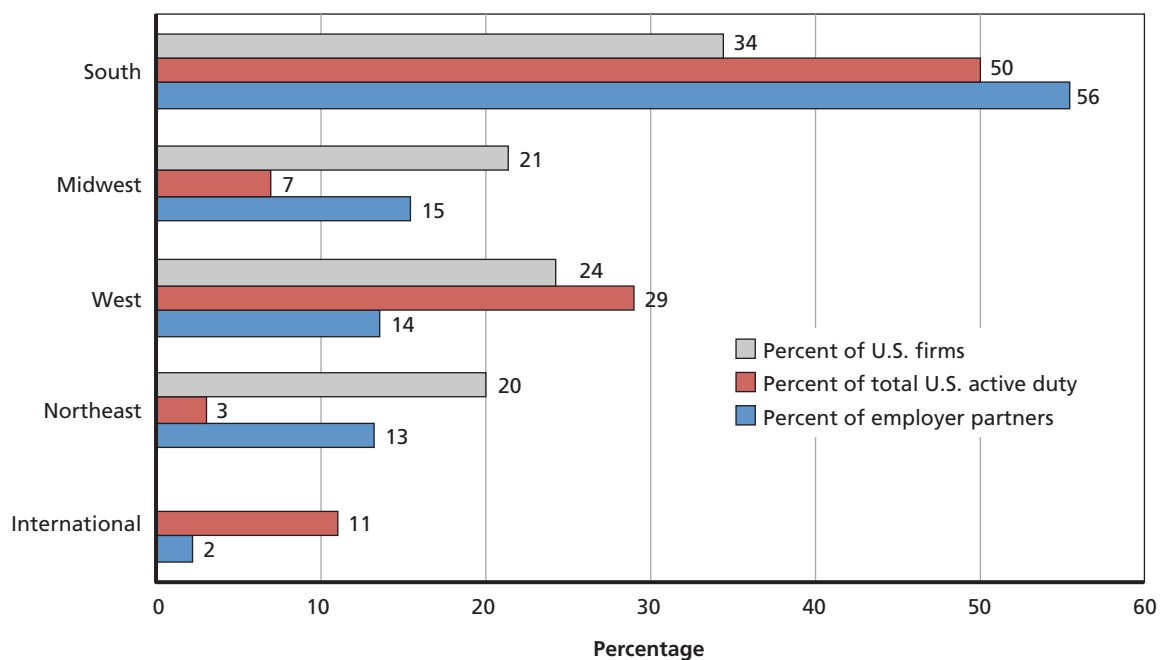
The location of an employer's headquarters is an important characteristic. If employer partner headquarters overlap with regions that have a high percentage of military personnel, that could increase exposure of partners to spouses. To address this point, we identified the geographic locations for employer partner headquarters using addresses listed in the LexisNexis® Company Dossier (2009). As already mentioned, we imputed data for partner entries missing this information or not in this database from the Partner Directory and other online sources. We then categorized the partners into one of four regions (i.e., Northeast, Midwest, South, or West) based on the U.S. Census Bureau geographic classes (U.S. Census Bureau, 2015b). There were six employer partners with headquarters located outside of the United States. We placed these partners into a separate category of "international."

Figure 2.4 displays the distribution of geographic locations for the headquarters of employer partners, the percentage of total U.S. active-duty force by geographic region, and the percentage of all firms in the United States by region. Most of these employers (55.5 percent) have headquarters in the South, with smaller percentages of partner headquarters located in the Midwest (15 percent), West (14 percent), and Northeast (13 percent). Two percent of these partners had headquarters located outside of the country.

Figure 2.4 shows the geographic distribution of total active-duty forces (including married and unmarried) using estimates from the Department of Defense's 2013 Demographics Profile of the Military Community (Department of Defense, 2014). Figure 2.4 also shows that

Figure 2.4

Percentage of Headquarters for Employer Partners by Region, Percentage of Total U.S. Active-Duty Force by Region, and Percentage of All U.S. Firms by Region



SOURCES: LexisNexis, 2009; U.S. Department of Defense, 2014; U.S. Census Bureau, 2015; DMDC, 2015.

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50 percent of the active-duty force is located in the South, which is comparable to the percentage of employer partners with headquarters in this region. The Midwest region had 7 percent of the active-duty force, the West had 29 percent of the force, and the Northeast had 3 percent of active-duty soldiers. These percentages differed in comparison to the percentages of employer partners by each region. According to data released by the DMDC, about 11 percent of the force is currently located overseas (as of 2015).

Finally, Figure 2.4 shows the geographic breakdown of all firms in the United States in 2012 based on data available from the U.S. Census Bureau (2015). According to these data, the South is home to 34 percent of firms in the United States. There are similar percentages of firms located in the other three regions: 21 percent in the Midwest, 24 percent in the West, and 20 percent in the Northeast.

The location of an employer partner's headquarters does not necessarily mean that they only offer jobs in a particular region. As discussed in the previous subsection, the overwhelming majority of these partners (93 percent) have an international or national presence, according to the Partner Directory. Thus, a company located in the Northeast (e.g., Toys "R" Us, Inc., which has a headquarters office located in New Jersey) may have offices (or stores) nationwide.

To summarize, our results show that most employer partners report having an international or national geographic reach and some have headquarters that are located in regions with a high percentage of military personnel. These characteristics have importance for military spouses who, on average, are more geographically mobile than civilian spouses are: According to the U.S. Census Bureau, the percentages of civilian and military spouses between 2007

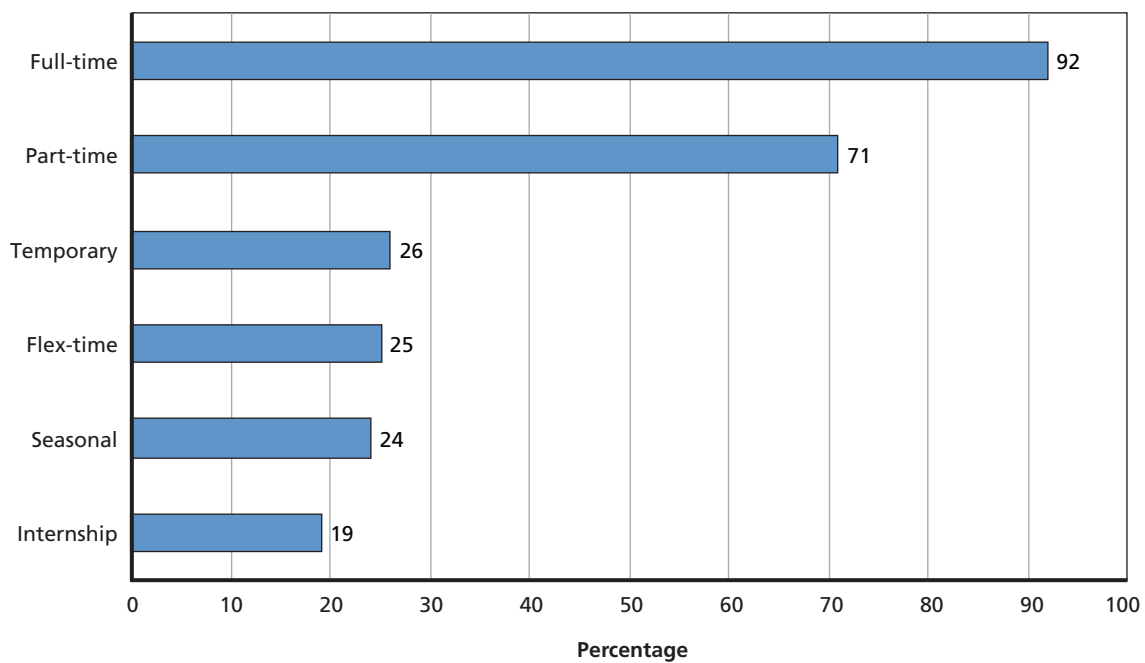
and 2011 who moved within the previous year was 9.9 percent and 47.4 percent, respectively (Rapino and Beckhusen, 2013, p. 5).

Types of Employment Available

We explored employer partners' self-reports on whether the company offers full-time, part-time, or temporary work opportunities. Data from the Partner Directory revealed that 225 employer partners report the type of work opportunities available in their companies. As illustrated in Figure 2.5, employer partners for whom we have data report offering a wide range of opportunities: 92 percent offer full-time positions; 71 percent part-time; around 25 percent offer temporary, flex-time, or seasonal work; and 19 percent offer internships.

We also examined telework opportunities. Telework is a growing trend for both private-sector employers (Tugend, 2014) and public-sector ones (U.S. Office of Personnel Management, 2013) within the U.S. economy. These trends may be particularly beneficial for spouses of military personnel. If a job is viable for teleworking, then it may create opportunities for military spouses to maintain a job after their husband or wife relocates to a new duty station. We constructed a variable that measures whether an employer partner offers telework. We first relied on data in the Partner Directory, which listed a partner's self-report on whether an employer offered telework. Second, we compiled another list of employer partners offering telework based on information on the Military Spouse Employment Partnership website (MSEP, 2015). We then reconciled these lists and determined that 117 of the 272 employer partners (43 percent) offer telework

Figure 2.5
Types of Employment Available from Employer Partners



SOURCE: MSEP, 2015.

NOTE: N = 225.

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opportunities. We examined this percentage across the NAICS supersectors and region, finding no significant differences in telework offerings by sector or region.¹³

Summary

This chapter discussed the data that we used to describe employer and Spouse Ambassador partners in the Military Spouse Employment Partnership. We described the 16 Spouse Ambassador partners, which connect military spouses with diverse networks of fellow spouses, employers, and career professionals. We found evidence of diversity in the type of employer partners that are currently part of this program. The majority of employer partners represent professional and business, education, health, or finance industries. Employer partners tend to be large (based on the number of people they employ), have an international or national presence, and have their headquarters located in the Southern region of the United States. We found that fewer than half of these partners report that they offer telework opportunities, which is a growing trend for private- and public-sector employers in the United States.

¹³ We found a nonsignificant difference in telework offerings by NAICS supersectors ($X^2 = 10.18$; $p = 0.43$, two-tailed). We also found a nonsignificant difference in telework opportunities by region using a Pearson's chi-square test ($X^2 = 1.72$; $p = 0.79$, two-tailed).

Assessment of Job Postings Available on Career Portal

Introduction

As explained in Chapter Two, a key feature of the Military Spouse Employment Partnership is the career portal, an online database of partners' job postings available for military spouses who register online. The career portal provides an important link between employer partners and military spouses. This portal is particularly important in the information age; research estimates that at least 90 percent of large U.S. companies recruit via the Internet (Cappelli, 2001).

This chapter summarizes our analysis of a list of available jobs (N=210,715) posted on the career portal on September 4, 2015, to describe the alignment between the types of skills and positions that employer partners are looking to fill, and the skills and interests of military spouses. While this sample is only representative of those posted on this portal and not of all jobs that employer partners have available, it does provide a cross-sectional "snapshot" at one point in time of a core component of the program that military spouses potentially rely on to find employment. This chapter addresses Task 2 (Assess the Types of Jobs Employer Partners Offer). We first describe our analysis of where jobs posted on the career portal are located. We then describe a textual analysis of military spouse users' keyword searches, compared with the titles and descriptions of jobs available. We conclude with our findings of a textual analysis of job postings' listed education and experience levels.

Location of Job Postings on the Career Portal

Of the sample of 210,715 jobs posted on the career portal, a little more than 90 percent mentioned a location within the United States, 4 percent were international jobs, and 5 percent did not list a country in the posting. We used postal codes to place the location of jobs on a map of the United States. Of the 191,340 U.S. jobs in the career portal, 165,085 (approximately 86 percent) had ZIP codes, with the remaining 26,255 (14 percent) not listing a ZIP code. Of the 165,085, only 115,912 jobs had valid ZIP codes (that is, no missing digits), representing 70 percent of U.S. jobs in this sample.¹

¹ Some of the postings without ZIP codes may represent virtual opportunities. Subsequent analyses will specify the characteristics of the job postings without accompanying ZIP codes, including virtual job opportunities.

Figure 3.1 illustrates the location of the 115,912 U.S. jobs with valid ZIP codes in our sample. This map shows that positions listed in the career portal are spread across the United States, with pockets of positions appearing on the West Coast, East Coast, and in the South (see orange- through green-colored ZIP codes). Figure 3.1 suggests that job postings are not restricted to one particular state or region. Subsequent analyses will compare the location of job postings in the career portal to the location of military installations and the percentage of military spouses affiliated with each installation.

Figure 3.2 displays the distribution of job postings by geographic region. These percentages represent the proportion of all 210,715 jobs in our sample. This figure shows that the Southern region has the highest percentage of jobs available in the career portal (24 percent), with similar percentages of jobs located in the Midwest (13 percent) and West (14 percent). In the United States, the smallest percentage of jobs was located in the Northeast (8 percent). Finally, only 4 percent of jobs were for positions in foreign countries.²

Textual Analyses of Job Postings

In addition to determining the location of jobs listed on the program's career portal, we also analyzed the types of jobs available and the extent to which those jobs align with what military spouses who used the career portal search for, with military spouses' typical years of experience, and with military spouses' typical education levels.

Types of Jobs Available

Methodology

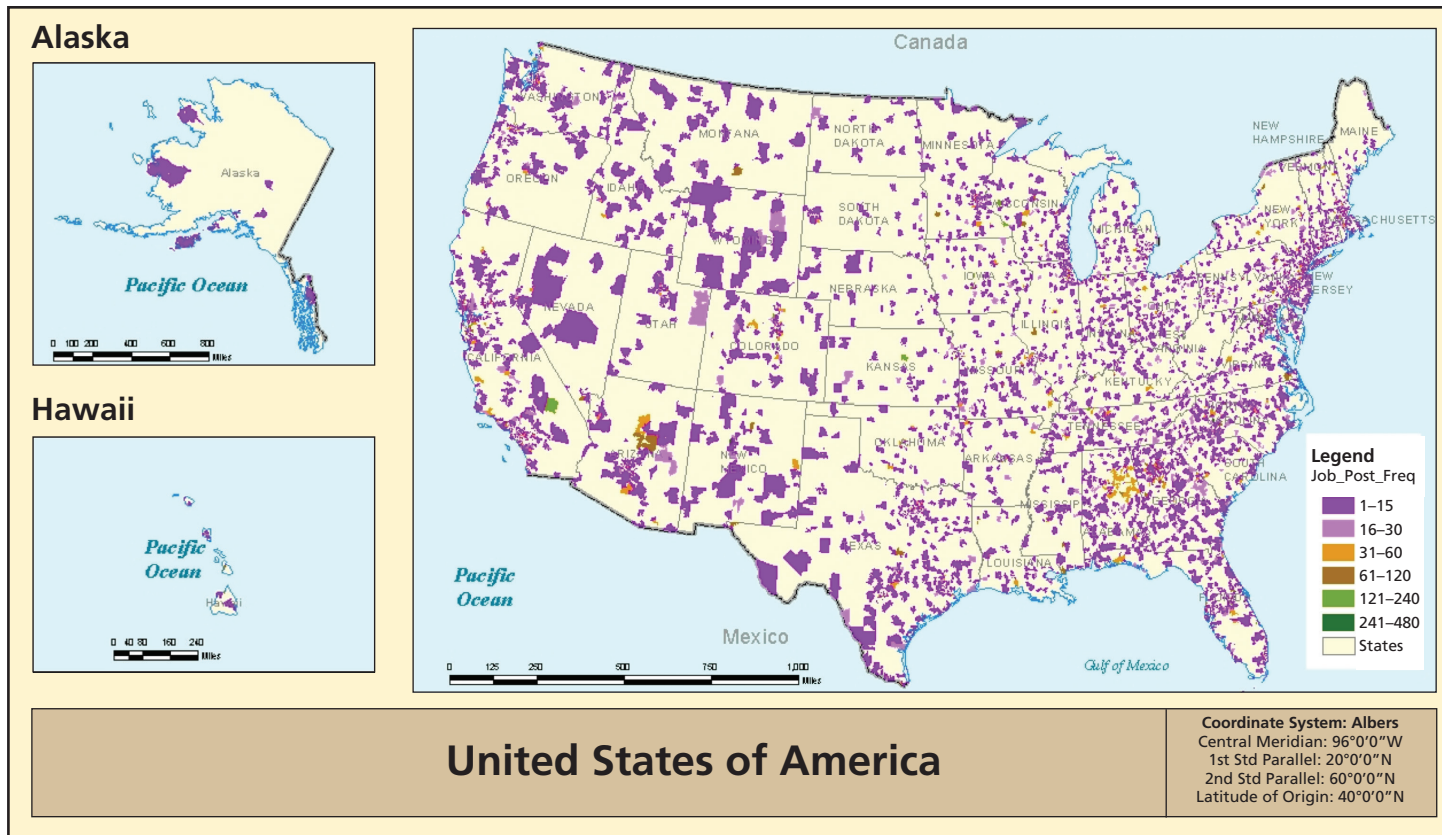
We analyzed the text of the titles and descriptions from job postings to characterize the kinds of jobs the program was facilitating. We focused on the "title" and "description" fields because they were nearly always populated, while many other descriptive fields such as "education required" and "minimum qualifications" were infrequently populated (6 percent and 1 percent, respectively). That data were frequently missing from these fields likely reflects a tendency of employers to put information in the "description" field without populating the other descriptive fields.

Our text analysis of job titles and descriptions proceeded by identifying common words indicative of the job post content, using these words to classify jobs into types, comparing these words to commonly searched terms, and assessing how job types patterned on experience and education words in the job descriptions. Commonly searched terms by job seekers were pulled from an internal Department of Defense report.

We first identified the most-frequent words in the job title field by uploading that content to RAND-Lex, a textual analysis program created and maintained by RAND researchers. RAND-Lex is a corpus-based text analysis system that takes in a large block of text, removes punctuation, calculates word and word doublet frequencies, and can compare these frequencies with reference corpora for English and Arabic. The title field in this case was already highly structured with a minimum amount of supporting words, such as "is" and "a," which made it ideal for identifying frequent keywords. We identified the 500 most common keywords in

² As noted in Figure 2.4, 50 percent of employer partners are headquartered in the South, 7 percent in the Midwest, 29 percent in the West, 3 percent in the Northeast, and 11 percent outside of the United States.

Figure 3.1
Geographic Dispersion of Career Portal Job Postings with Associated ZIP Codes

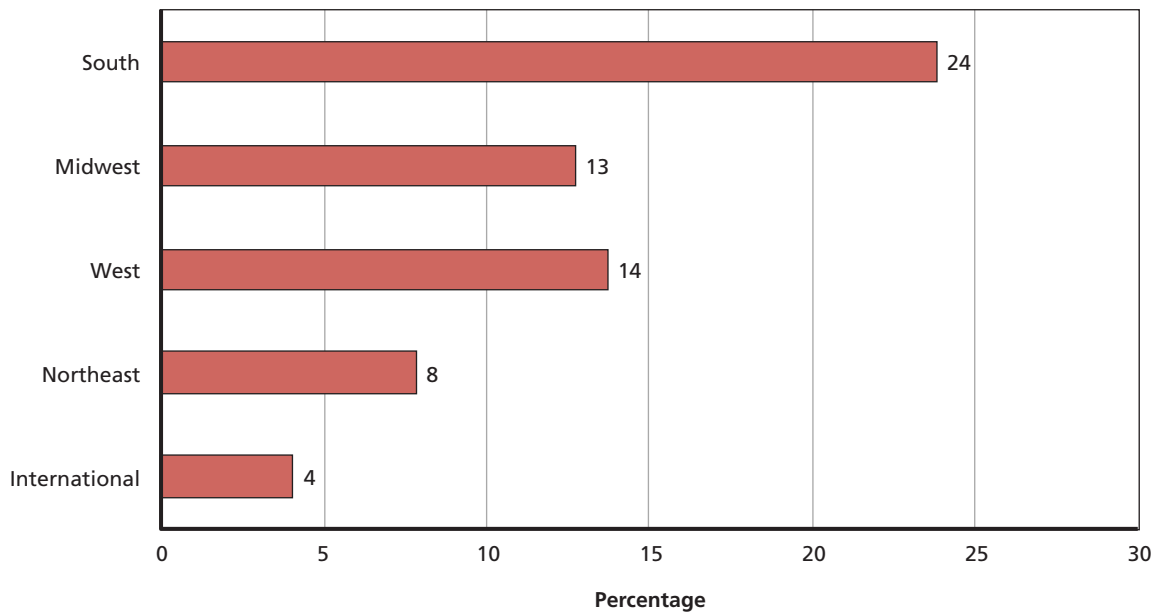


SOURCE: Military Spouse Employment Partnership Career Portal, September 4, 2015.

NOTE: N = 115,912 job postings in the United States with valid ZIP codes.

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Figure 3.2
Distribution of Sampled Job Posting Within the Career Portal by Geographic Region



SOURCE: Military Spouse Employment Partnership Career Portal, undated.

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the job titles; then, by visual inspection, removed remaining uninformative supporting words. This resulted in 408 content-informative and frequent keywords. We then scored the presence/absence of these keywords in each of the titles and the descriptions with the stringr package in the R software environment. Also in R, we calculated the presence of the following words in titles and descriptions, as these words that reflect the desire of military spouses for telework and flexible work:

- telecommute, tele-commute
- telework, tele-work
- virtual work, virtual-work
- parttime, part time, part-time
- flextime, flex-time
- work from home.

An additional step of our textual analyses employed human coding and machine learning algorithms (implemented in R) to assign job types across the entire data set based on word presence/absence in job titles. Appendix B provides a detailed explanation of the methods used.

Frequently Searched Keywords

Table 3.1 lists the most frequently searched key words and whether they were present in the 500 most frequent title words in jobs posted. We found that of the 37 keywords most frequently searched by military spouses in the career portal, 20 matched the 500 most frequent title words in jobs posted (left column). The remaining (17) frequent key word search terms, however, did not match the frequent title words (right column).

Table 3.1
Occurrence of Frequently Searched Words in Job Titles

Keywords Included Among 500 Most-Frequently Used Terms in Job Titles	Keywords Not Included Among 500 Most-Frequently Used Terms in Job Titles
Cashier/Clerical/Clerk	Certified
Nurse/RN/LPN	Nutrition
Mental	Childcare/CDC/Children
Clinical	Occupational
Office	CNA
Pharmacist/Pharmacy	Coder/Coding
Communication/Computer/IT/Information/Software/Technologist/Technology	Psychologist/Therapist/Therapy
Data	Radiology/Radiologic/Radiographer
Research	Counselling/Counsellor
Resources	Reception/Receptionist
Design/Designer/Graphic	Dental/Hygienist
Service/Services	EMT
Social	Speech
Health/Health Care	Surgical
Human	Lab/Laboratory/Phlebotomist/Phlebotomy
LPN/RN/Nurse/Nursing/Practitioner/Registered	Teacher/Education/Elementary
Tech/Technician	Vet/Veterinary
Management/Manager/Supervisor	
Medical	
Work/Worker/Work at home/Teleworker/Telecommuting/Virtual	

SOURCE: Internal Department of Defense report not available to the general public; Military Spouse Employment Partnership Career Portal, September 4, 2015.

NOTE: LPN = licensed practical nurse; RN = registered nurse.

A number of jobs stand out from this list as potentially well-matched to the current set of employer partners. Many search terms relating to health care and data research that were used by military spouses also appear among the most frequent terms in job titles. A number of other terms are missing, however—notably, terms for teacher, elementary education, and child care are not frequent among the titles, nor are terms that apply to particular technical or professional jobs, such as coder, psychologist, radiology, and dental hygienist.

The highly searched terms that are infrequent among job postings make some intuitive sense considering the partners currently enrolled in the program. As described in Chapter Two, Military Spouse Employment Partnership has intentionally focused on enrolling partners that have locations across multiple states or have existed more than five years. Those types of criteria likely exclude some industries (such as school districts) that do not traditionally have locations across states. Similarly, most places hiring dental hygienists and counselors/psychologists would not have multiple locations across different states.

“Coder” could mean data entry or medical coder, or software developer positions, and it is unclear which type of job a military spouse could be looking for with this general term. In the case of data entry or medical coding, the Military Spouse Employment Partnership may be missing particular employers within relatively specialized industries. In the case of software development, many companies needing this skill may not have existed five years ago.

In the cases of schools, dental or counseling practices, and startups, the Military Spouse Employment Partnership could gain partners in these industries by connecting with the com-

munity networks through which these groups organize. State educational departments and professional associations are likely points of contact for education, dental, and counseling work. In addition, the Family Readiness Centers on installations, which are already the key points of contact for connecting spouses to local opportunities (as described in Chapter Two), could be alerted to prioritize outreach to these specific industries.

Frequency of Virtual and Telework Keywords

We found that 13,066 job postings (roughly 6 percent) included any of the following words in either their titles or descriptions: telecommute, virtual, telework, tele-work, virtual work, virtual-work, or work from home. Of these 13,066 postings, 12,985 included these words in the description while only 2,382 included them in the title. This indicates the description field may be a more useful indicator for whether a job includes the potential for telecommuting. Jobs including these words were posted by 71 of 129 partners that posted jobs (55 percent).

Frequency of Part- or Flex-Time Keywords

References to part-time or flex-time work were more frequent than those for virtual work, as 24,313 postings (11.5 percent) made some mention of these words. We used the following words as indicators of part-time position options: parttime, part time, part-time, flextime, and flex-time. Most uses of words relating to this concept occurred in the description field ($n = 21,683$), and there were fewer uses in the title field ($n = 7,006$). These numbers do not sum to the total number of postings with words relating to the part-time concept because some postings used these words in both the description and the title. Out of 129 partners posting jobs, 91 (roughly 71 percent) used a word relating to part-time work in one or more job postings. It should be noted that the data included a “job type” field that designated whether the work was full time, part time, flex time, seasonal, telework, or temporary, but this field was blank for 91 percent of posts.

References to telework and part-time work are probably significantly lower among job postings than the military spouse population would like. As discussed in Chapter One, 70 percent of military spouses have children (DMDC, 2013). Options for working from home, part-time employment, or full-time employment with flex-time options represent possible ways to reduce barriers to employment among this population, but our text analysis indicates such arrangements may constitute a minority of jobs posted.

Job Types and Statements of Required Experience and Education in Job Post Descriptions

We analyzed textual statements about years of experience and education that were present in job posts’ description fields to assess the levels of expertise being solicited by partners. Textual data mining of the description field was necessary because, as noted above, the structured fields of “education required” and “minimum qualifications” were infrequently populated (6 percent and 1 percent, respectively). We searched for character string matches on a number of variations of years of experience and educational statements (see Appendix B for the list of characters). Strings were matched after lowercasing all text and removing apostrophes.

We also classified each job post into a type of occupation based on keywords in the job title. We classified all 210,719 job posts by first having a human coder manually classify 919 job titles selected randomly from the full set. These titles were classified into job types based on criteria outlined in the Bureau of Labor Statistics Standard Occupational Classification (Bureau of Labor Statistics, 2010). The human coder read each of the 919 titles and assigned

each to one category. We trained learning algorithm software using half of the manually coded posts, and validated the algorithm with the remaining half. We then applied the algorithm to the entire data set to replicate similar classifications of job titles into types (see Appendix B for full details on the methodology employed).

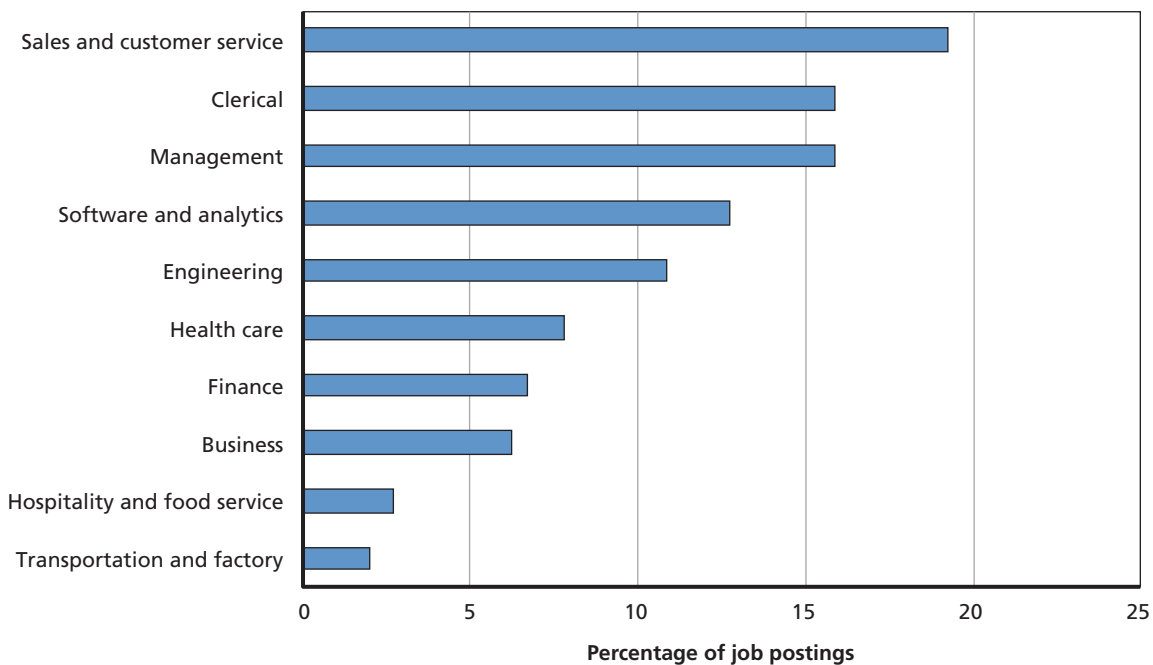
Figure 3.3 illustrates the types of jobs listed in the career portal and their frequency. The results indicate that sales and customer service jobs are the most frequently posted, followed closely by clerical and management positions. The less-frequently posted job types included hospitality and food service, as well as transportation and factory work.

As illustrated in Figure 3.4, we found that almost half (46 percent) of 210,718 job postings used one of our searched phrases for years of experience. The most-frequently stated experience times were six months or more, one year or more, and two years or more: Each occurred in 9.5 percent or more of job postings. Statements involving five years or more of experience also were fairly common, occurring in 7 percent of postings.

Some mention of an educational degree level (high school through doctorate) was made in 36 percent of job post descriptions. The most commonly sought degree was a bachelor's (15 percent) followed by a high school diploma (12.5 percent) and an associate's degree (6 percent). Master's- and doctorate-level education each were mentioned in less than 2 percent of posts (Figure 3.5). Some mention of licensure or certification was made in 19 percent of job post descriptions.

The years of experience stated in job post descriptions indicates most, but certainly not all, employers had jobs available for junior-level employees at the date we examined the postings. This feature of the job posts would appear a reasonably good fit for the military spouse

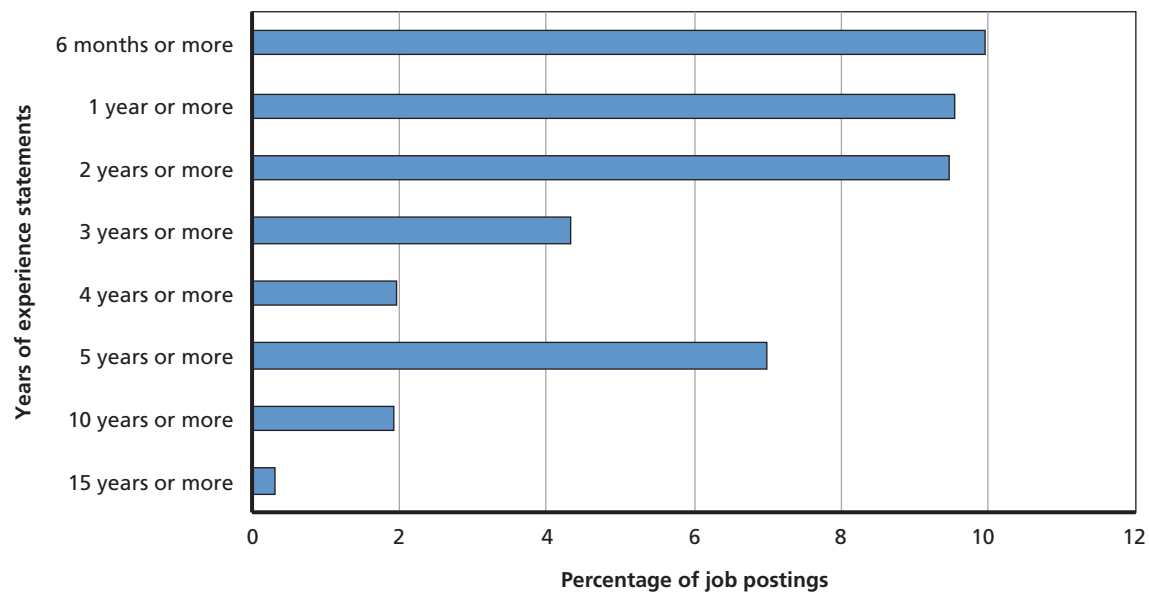
Figure 3.3
Percentage of Job Types Among Job Postings



SOURCE: Military Spouse Employment Partnership Career Portal, 2015.

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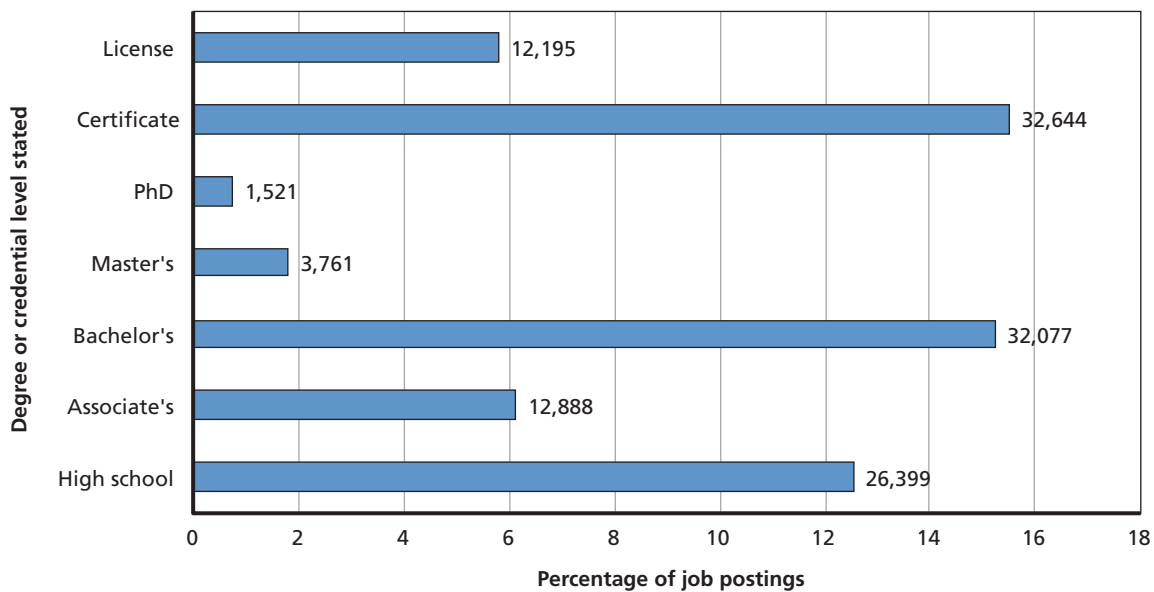
Figure 3.4
Statements Regarding Experience in Job Postings



SOURCE: Military Spouse Employment Partnership Career Portal, 2015.

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Figure 3.5
Statements Regarding Educational Degree in Job Postings



SOURCE: Military Spouse Employment Partnership Career Portal, 2015.

RAND RR1349-3.5

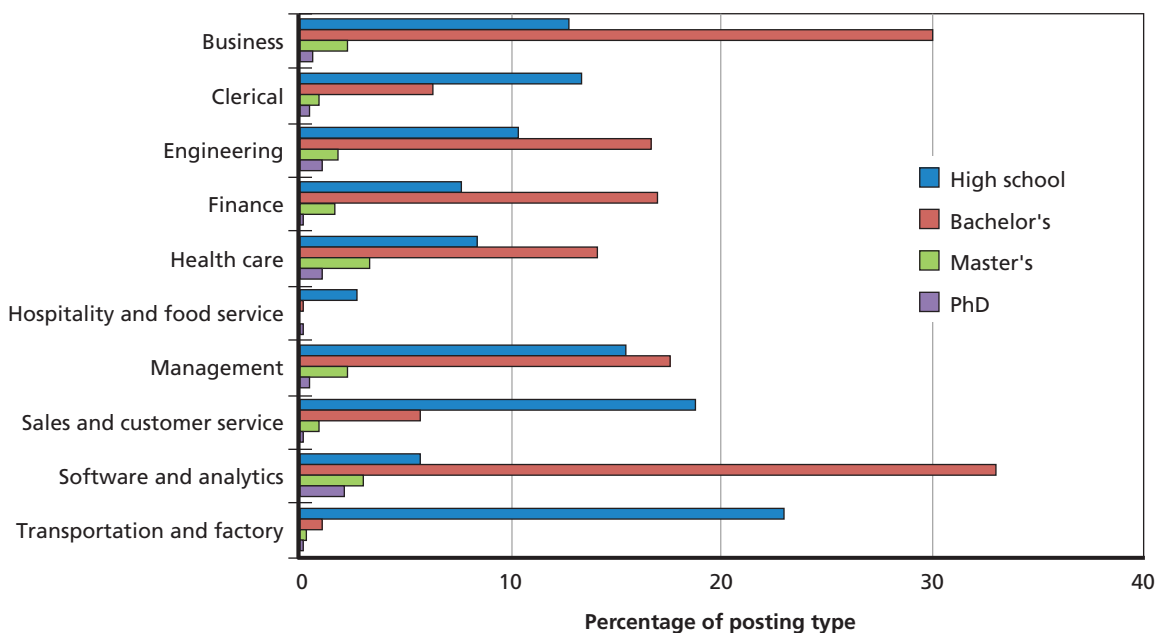
population, 42 percent of whom are under 31 years of age. The observed distribution of educational degrees from job posts also appears to be reasonably in line with the educational background of military spouses, 46 percent of whom have completed some college and 29 percent of whom had a bachelor's or other four-year degree. Fifteen percent of military spouses have a graduate or professional degree (see Appendix A). The job posts appear to have a relatively smaller percentage that require a graduate degree-level education, so this more-educated portion of the military spouse population may be underserved by the career portal. That said, individuals with graduate education may rely more on their own professional networks than the career portal to obtain employment.

Job Type by Education

We combined our analysis of occurrence of education words in job posting descriptions with the job types that were assigned by the learning algorithm based on keywords in job titles (see Appendix B for more details on the methodology employed). Notable patterns include the high frequency of terms for bachelor's degrees (e.g., bachelor's, BS, BA) occurring in the business and software and analytics job types. This pattern seems reasonable, and it is notable that terms for bachelor's degrees were not among the terms we fed the algorithm that classified job type. This provides some additional validity to the algorithm used to classify job types. It is also logical that clerical, transportation, and factory job posts make the most-frequent references to high school degrees. Results are illustrated in Figure 3.6.

Associate's degrees and more-specialized types of licenses or certificates were also mentioned in the job descriptions by a number of job types. "Transportation & Factory" and "Sales & Customer Service" both had a high occurrence of the words for license, likely referring

Figure 3.6
Percentage of Job Postings with Education Level in Description by Job Type



SOURCE: Military Spouse Employment Partnership Career Portal, 2015.

RAND RR1349-3.6

mostly to driver's licenses. "Health care" jobs also made frequent mention of licenses, but these mentions likely referred to licensure for particular types of medical practice (see Figure 3.7).

Job Type by Experience

We similarly analyzed how mentions of experience levels in descriptions patterned on assigned job type. We found that "Transportation and Factory" job postings made the most frequent mention of a specific months/years of experience, followed by "Sales and Customer Service." This is illustrated in Figure 3.8.

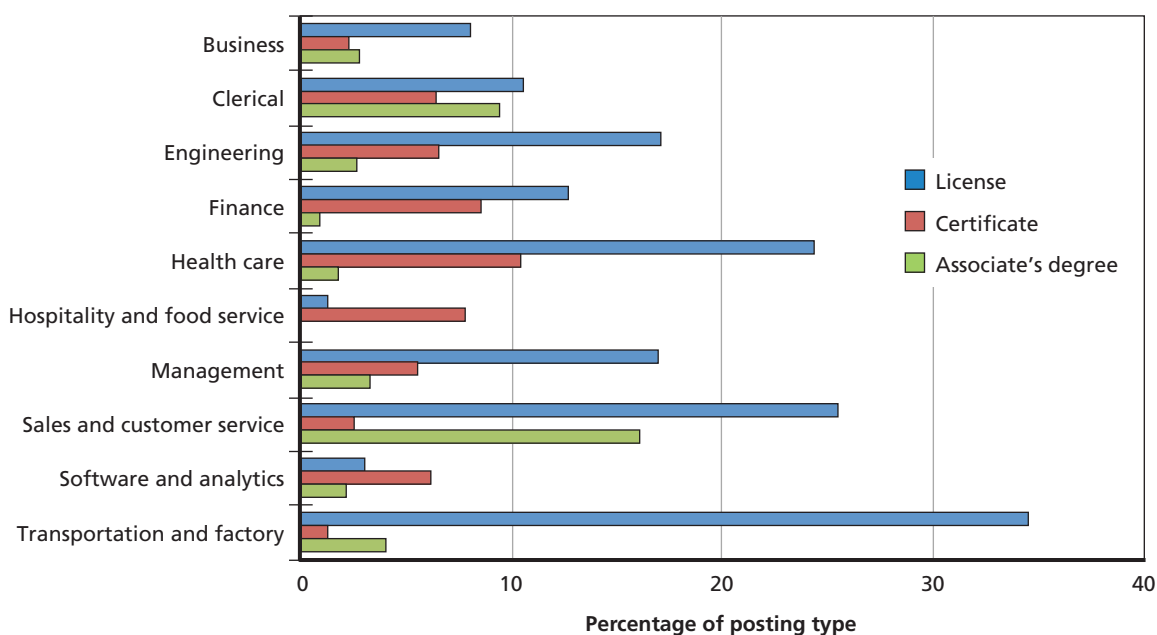
The analyses presented in this section suggest there is a match with military spouses' needs for some industries, but a mismatch in others.

There are likely matches with military spouse portability and education. Sales and customer service job types were among the most commonly posted. Retail sales jobs at large national chains may fulfill the need for job portability, as would business-to-business sales jobs that frequently have work being conducted off site or on the road. Most job postings across job types seek levels of education and experience consistent with entry- or mid-level positions, but a full range of experience and education are represented. Both points are consistent with the broad demographics on military spouses, but as a population they are relatively young (65 percent being under 35 years of age). Military spouses frequently possess the broad educational categories in the posted jobs, since 98 percent of military spouses have a high school diploma and 58 percent have a vocational diploma, associate degree, or bachelor's degree (Ryan and Siebens, 2012; DMDC, 2013).

There is a possible mismatch with specific skills and partner industries. The software and analytics job type represented a little less than 13 percent of the postings, and coder/coding was not among the 500 most frequent keywords in job titles, although it was among

Figure 3.7.

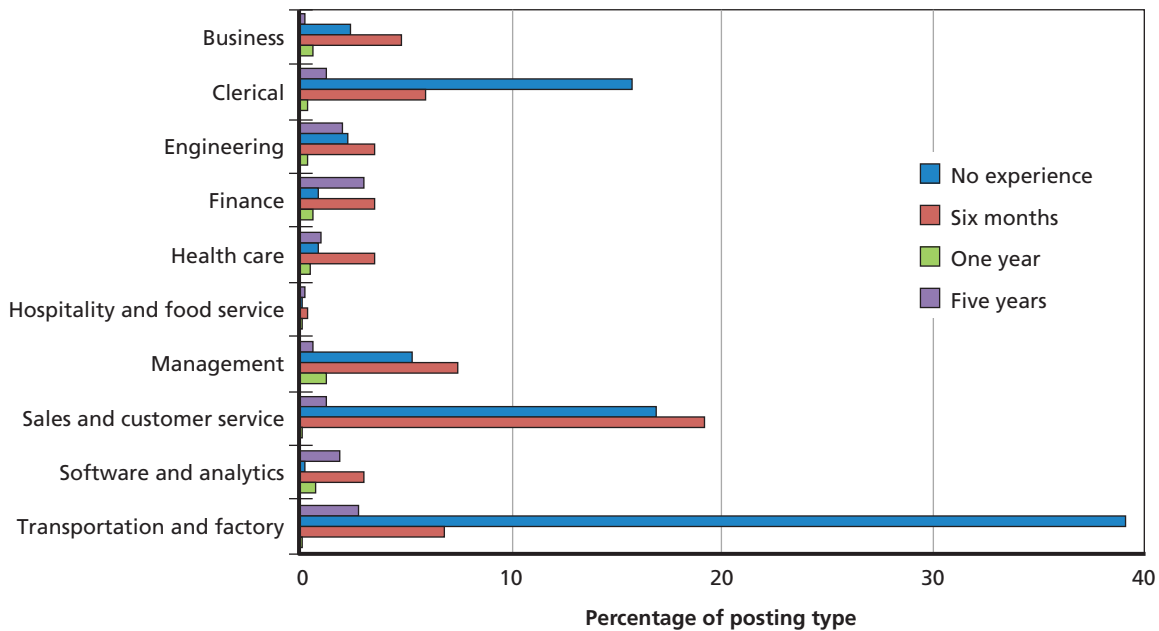
Percentage of Job Postings with 'Specialized' Education Level in Description by Job Type



SOURCE: Military Spouse Employment Partnership Career Portal, 2015.

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Figure 3.8
Percentage of Job Postings with Experience Level in Description by Job Type



SOURCE: Military Spouse Employment Partnership Career Portal, 2015.

RAND RR1349-3.8

the top searched terms by career portal users. This suggests military spouses might benefit from the program building more connections to some portions of the software and analytics marketplace. More information is needed, however, about what types of coding military spouses desire and are qualified for before more actionable recommendations can be made. Education-sector jobs were sufficiently infrequent that among more than 900 manually coded postings, we did not generate a sufficient sample to train our learning algorithm. At the same time, words for “teacher/education/elementary” are among career portal users’ most-frequent search terms. It makes sense that many military spouses would see early childhood education as a desirable job type, given the opportunity it presents for part-time work and work-life balance.

Summary

The analyses of geographic location of job postings presented in this chapter provide a first-stage analysis. We found that jobs available on the program’s career portal were relatively well spread across the United States. We also explored the alignment between types of jobs posted on the career portal (and the levels of education and experience articulated in those posts’ descriptions) with the types of careers and education and experience levels of military spouses in general. We found that more than half of the frequently searched keywords aligned with available job titles and job descriptions. We also found that articulated education and experience requirements accord with military-spouse backgrounds, yet only 36 to 46 percent of posts contained education or experience information, respectively. The results presented in this section suggest that the Military Spouse Employment Partnership is likely facilitating some employment needs of military spouses appropriately but could do more to facilitate others.

Concluding Remarks and Next Steps

Concluding Remarks

Summary of Key Findings

The analyses presented in this report summarize the first step of an evaluation of the Military Spouse Employment Partnership. To date, RAND has examined the characteristics of the program, its employer and Spouse Ambassador Network partners, and conducted a first set of analyses to determine the alignment between jobs posted on the career portal and military spouses' career fields and education or experience levels.

We found evidence of a diversity in the types of employer partners that are currently part of this program: The majority of employer partners represent professional and business, education, health, or finance industries, which are career fields that previous research has found military spouses have reported interest in. Employer partners in the program also tend to be large (based on the number of people they employ), and report having an international or national presence. We found that more than 70 percent report offering part-time work, 25 percent offer temporary or seasonal work, and fewer than 50 percent of partners report that they offer telework opportunities, which is a growing trend for private- and public-sector employers in the United States.

Early analyses of jobs posted in the program's career portal suggest that jobs listed by employer partners are spread across the United States. We also found some evidence that jobs listed on the career portal were relatively well matched to all military spouses' education or experience levels, as reported in surveys of military spouses (DMDC, 2013; Maury and Stone, 2014). However, we also found some areas that could be improved.

Remedying Causes of Mismatch

In the cases of coding- and education-related jobs, partner criteria and outreach strategies may be impediments to improved service to military spouses. More research is needed to determine what kind of coding work was desired by portal users, but some industries, such as software development, may not fulfill Military Spouse Employment Partnership criteria, such as being in business for more than five years and having a multistate distribution. In the case of education, most public school systems and private schools would not have a multistate distribution.

One step toward including more diverse job types could be to modify the partnership criteria for some industries on a case-by-case basis. The program may need to adopt new methods of promoting the partnership for industries with fewer single national points of contact. For

education-related jobs, departments of education for each of the 50 states may provide avenues for achieving connections to and enrollments from local school districts. However, further analysis is needed to determine whether these suggested tactics could best meet the career interests and education levels of military spouse users of the career portal.

Improving the Functionality of the Career Portal

Only about one-third of job postings included information about required education or experience. Nearly all of the information that was present was included as text in the job description field rather than separated into a field of its own. Functionality of the career portal could be improved by encouraging partners to list education and experience information as a separate data field. The career portal currently does not include filter boxes for the education or experience requested in a job posting. This may require further input from the portal vendor, if partners are in fact providing correct Extensible Markup Language (XML) code, but the portal does not separate the information into distinct fields.¹

A separate issue requiring greater partner engagement is the presence of already filled or out-of-date job postings within the portal. Currently, the policy is that job postings are taken down after 21 days, but if partners use an automatic XML feed and do not clean filled or retired positions from the feed, then such positions will be continuously reposted in the system.

The current career portal includes search options for keywords within the job title and filter options for state, city, postal code, country, military installation proximity, company name, industry, job type, and part-time/flex-time/telework status. These fields may be of limited utility, however, assuming they derive only from the structured data fields in the database. In the data received by RAND, at least, these fields were infrequently completed. For example, structured fields for type of work (part-time/full-time/flex-time, etc.), education required, and minimum qualifications were populated 9 percent, 6 percent, and 1 percent, respectively. Additionally, none of these fields speak to the type of job that is being posted by each partner, as was addressed by the text-mining analysis of job type presented in this report, and job type might be a useful structured data field for portal users. Here, again, the Military Spouse Employment Partnership could encourage partners to populate a data field for job type. Alternatively, or in addition, the Military Spouse Employment Partnership could apply a machine learning algorithm similar to that used in this report to infer the likely job type of a given job post.

Additional portal filter options would be useful to resolve ambiguities in some of the posts or search terms used by military spouses. For example, coding might indicate software development or it might indicate medical billing coding or some other sort of systematic database work. Additional filter breakouts could help resolve such ambiguities.

Limitations of the Analysis

The results presented in this report have some limitations. First, the analyses presented here examine the extent to which the partners' characteristics and the jobs available on the career portal align with the employment needs or characteristics of *all* military spouses. The *users* of the program could have more-specific needs that we were not able to explore in this first stage of analysis. Second, we examined data on the program's career portal at one point in time.

¹ XML is a commonly used data encoding schema through which the career portal allows partners to automatically upload job postings. Some partners use the XML feed while others manually input positions into the portal.

This provides us with a snapshot of what jobs are available at one point in time. It could be that we missed job postings that are seasonal in nature. For example, teaching positions need to be filled prior to the start of a school year, so any education-related jobs most likely were not posted immediately after the start of the school year.

Next Steps

The results presented in this report are an important first step in documenting the Military Spouse Employment Partnership. RAND plans to continue its analysis of the program in order to further evaluate the extent to which the program is meeting the needs of military spouses in offsetting wage gaps between military and civilian spouses and underemployment and unemployment of military spouses. RAND will undertake additional analyses in the next phase of research to build on the analyses already completed.

Task 1. Describe the Characteristics of Military Spouse Employment Partnership Partners

In the next stage of analysis, we will interview a purposefully selected sample of employer and Spouse Ambassador Network partners. We will ask a variety of questions about their experiences with the program's components—such as, but not limited to, obstacles in reporting data to the Military Community and Family Policy office, experiences on what facilitates or hinders their supporting military spouses in the workplace, perspectives on the benefits of hiring military spouses, and what quality improvements the Department of Defense could make to the Military Spouse Employment Partnership. In addition, RAND will develop an index that the Military Community Family Policy office can use to measure employer *engagement* with the program, using data from the Partner Directory, hiring reports, the career portal, interviews with Military Community and Family Policy office staff, interviews with partners, and interviews with the military spouse users of the program (described below). We will then use this index to recommend ways the program can encourage and develop deeper partner engagement to ensure that military spouses' employment and careers are supported.

Task 2. Assess the Types of Jobs That Employer Partners Offer

Additional analyses with the job postings data will include a comparison of locations of job posts (as defined by their ZIP code) with the geographic locations of U.S. military installations and the family demographics of these posts, particularly the number of military spouses located near the installations. We will also conduct a deeper investigation of job postings without associated ZIP codes to determine whether they offer virtual or telework opportunities. We also plan to conduct a more thorough analysis of job posts that appear to be virtual or telework positions, in general, since these are reportedly desired by military spouses. Important questions for this analysis are whether virtual positions are clustered within particular job types, industries, or geographic locations of the company's headquarters and jobs available. To address the limitations of this first study that included only one data pull from the web portal, we will replicate an analysis of job posts from a second data pull at a different time of the year. Differences between the second data pull and the first will enable us to assess the robustness of our findings. For example, we will be able to test whether pulling data in September resulted in spuriously low rates of education jobs in posts by comparing that data to the same output from another month outside the fall start of school season.

Task 3. Analyze Military Spouse Participants' Perspectives on the Program's Utility and Performance

RAND will conduct interviews with a representative sample of military spouse career portal registrants to gather direct evidence from military spouses on whether the supports provided by the program are meeting the needs of military spouses looking for work, experiencing underemployment, or not earning wages commensurate with their education or experience.

Task 4. Provide Guidance on Data and Metrics That Can Support Continued Monitoring and Evaluation

To ensure that the Military Community and Family Policy office is able to conduct future evaluations of the Military Spouse Employment Partnership, RAND will assess the office's data collection efforts and provide guidance on what data collection systems or processes could be put in place so that an evaluation of spouses' outcomes can occur in the future.

Task 5. Provide Recommendations to Improve the Military Spouse Employment Partnership

Based on the analyses of the previous four tasks, RAND will provide a set of suggested improvements to the program's processes, components, and policies with the aim of enabling the program to continue to support military spouses' employment, wages, and career satisfaction.

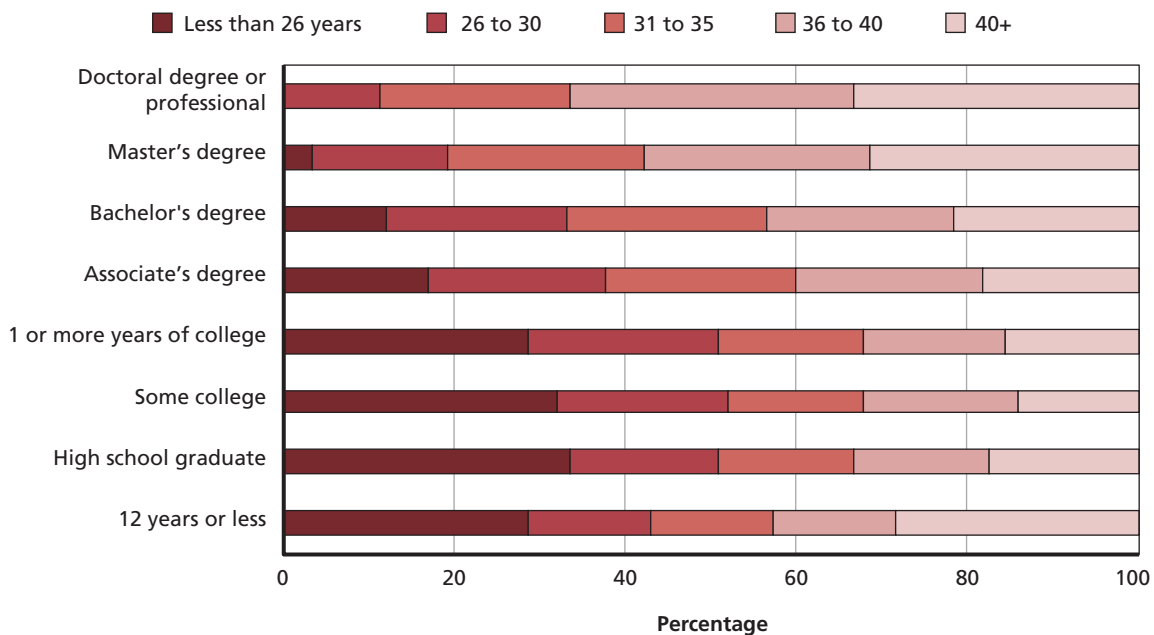
Select Findings from the Survey of Active Duty Spouses (2012)

Although military spouses, on average, differ from their civilian counterparts, they are not a homogenous group. There are age, education, and employment differences within the military spouse population that could affect their inclination to work and their ability to find employment that meets their education or career goals or needs. This heterogeneity, in turn, needs to be taken into consideration when determining how best to support spouses. This appendix provides background information on military spouses' demographic profile and employment, using results from the 2012 ADSS, administered by Military Community and Family Policy.

Figure A.1 documents the education level of military spouses by age. It is apparent that younger military spouses tend to have fewer years of education than older military spouses.

Figure A.2 documents the self-reported percentage of ADSS 2012 respondents who are unemployed by education level. This figure illustrates that military spouses with fewer years of education report higher unemployment rates than those who received more schooling.

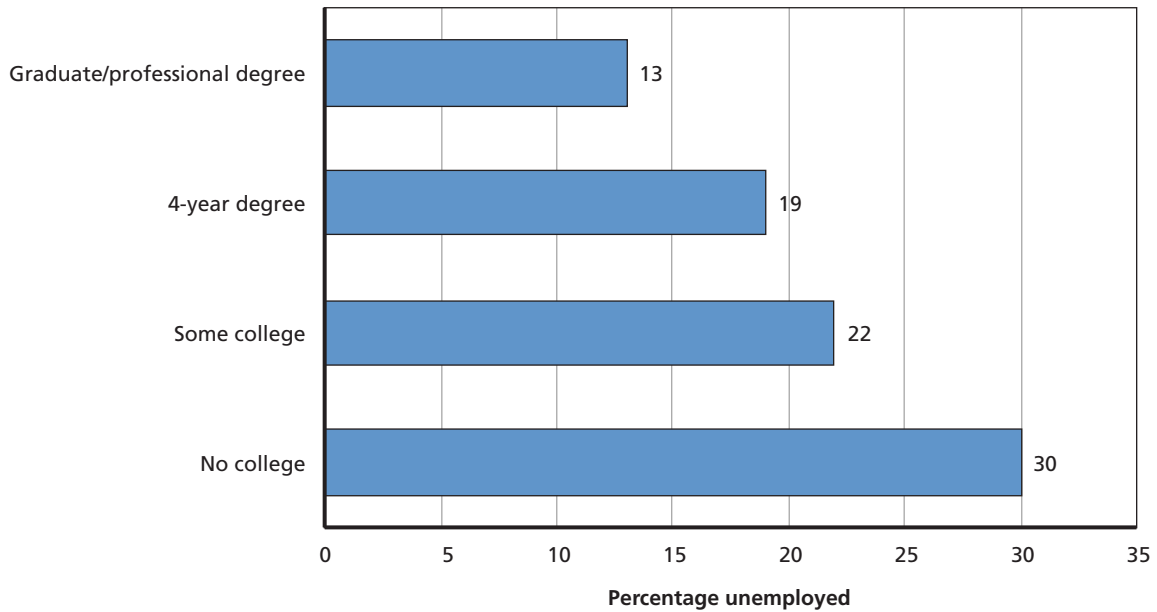
Figure A.1
Education Level of Military Spouses by Age Group (2012)



SOURCE: DMDC, 2013.

RAND RR1349-A.1

Figure A.2
Percentage of Military Spouses Reportedly Unemployed by Education Level (2012)

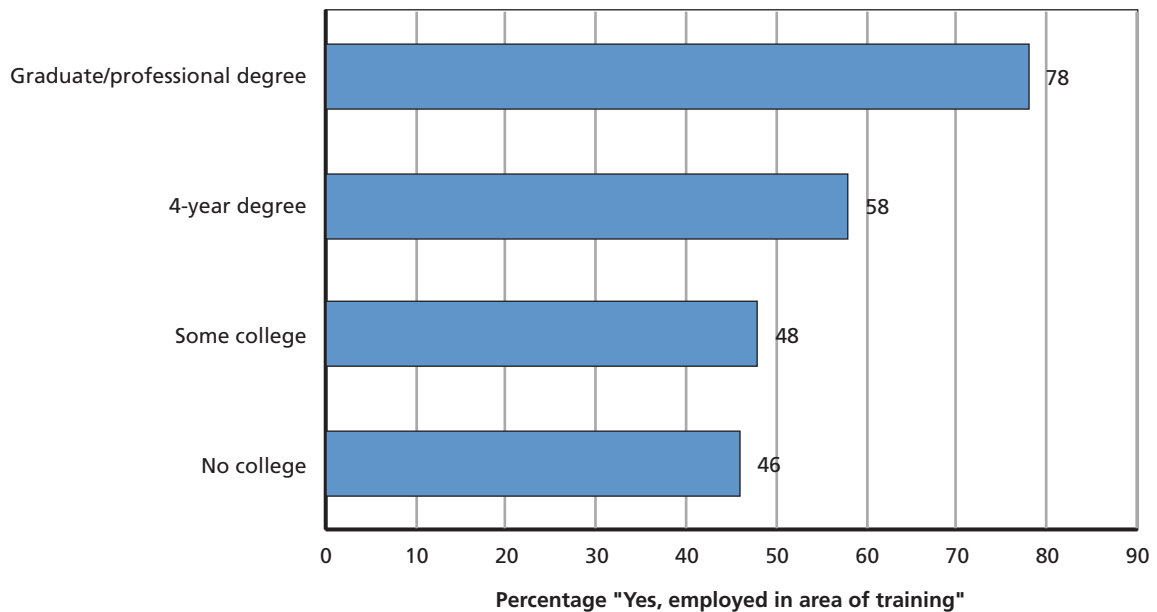


SOURCE: DMDC, 2013.

RAND RR1349-A.2

Figure A.3 illustrates that military spouse respondents in the ADSS 2012 with more years of education are more likely to be employed in their area of training.

Figure A.3
Percentage of Military Spouses Employed in their Career Field by Education Level (2012)



SOURCE: DMDC, 2013.

RAND RR1349-A.3

Methodology Used For Job Postings Analysis

This appendix provides more details on the methodology employed for the jobs postings analysis in Chapter Three.

Terms Searched in Job Post Description to Reflect Experience and Education

- 6 months experience
- six months experience
- 1 year experience
- one year experience
- 1 or more years experience
- one or more years experience
- 1 year of experience
- one year of experience
- 1 or more years of experience
- one or more years of experience
- 1+ years of experience
- 1+ years experience
- 1 plus years of experience
- 1 plus years experience
- one plus years experience
- one plus years of experience
- 2 years experience
- two years experience
- 2 or more years experience
- two or more years experience
- 2 years of experience
- two years of experience
- 2 or more years of experience
- two or more years of experience
- 2+ years of experience
- 2+ years experience
- 2 plus years of experience
- 2 plus years experience
- two plus years experience

- two plus years of experience
- . . . this pattern is repeated for the numbers 3, 4, 5, 10, and 15
- high school diploma
- associate's degree
- bachelor's degree
- BA
- BS
- master's degree
- MA
- Ph.D.
- PhD
- license
- licence
- lisence
- certificate
- certified.

Job Type Analysis Methodology

Unsupervised Clustering

One approach to grouping the jobs into types is to find statistical clusters of job titles that have similar patterns of word occurrence. The next step is to examine the titles included in each cluster after the fact to interpret what each cluster signifies qualitatively. In this process, the mixed methodology relies on an essentially quantitative process to determine clusters, and a qualitative interpretation of them after the fact. This type of approach is termed *unsupervised* cluster analysis because no qualitative information informed the machine algorithm as to how to structure the word-frequency data—the structuring is achieved through statistical patterns alone.

We implemented this unsupervised cluster analysis approach using a k-medoid cluster analysis on the table of job postings by word occurrence for the 500 most frequent words. K-medoid clustering is a long-established method to extract natural groups of data from data points by variable matrices (Kaufman and Rousseeuw, 2005). We used the Manhattan (city block) distance measure in clustering, which sums the number of differences in word occurrence between any two job titles or descriptions. We searched for between one and 30 clusters using the Calinski-Harabazs criterion to determine which number of clusters maximized variation being partitioned among them (Milligan and Cooper, 1985). We implemented this approach with the function “pamk” from the R package fpc (Hennig, 2015).

The cluster analysis of job titles identified a strong cluster of job postings across industries that were associated with the keywords *sales* and *representative*. A total of 8,558 (approximately 4 percent) job titles fit within this cluster. There were 40 partners that posted sales representative jobs (Table B.1).

Supervised Machine Learning

We did not identify strong clusters among the other jobs posted, which necessitated turning to a more time-intensive supervised classification approach. We implemented a supervised clas-

Table B.1
Sales Representative Job Postings by Partner

Company	Number of Sales Representative Jobs Posted
24 Hour Fitness	4
Acosta Sales and Marketing - Military Division	104
All Medical Personnel	1
American Red Cross	3
Andrews Federal Credit Union	4
AppleOne	9
AT&T	328
BDS Marketing Inc.	212
Citi	421
Coca-Cola Refreshments	4
Computer Sciences Corporation (CSC)	1
Convergys	3
Dell, Inc.	82
DialAmerica	6
DIRECTV	13
EMC	1
GEICO	7
HCA, Hospital Corporation of America	5
HGS	1
Hilton Worldwide	10
Hitachi	19
J&A Marketing	4
Manpower Inc.	1,177
Microsoft	4
Military Sales and Service	2
Mom Corps	1
Republic Services	892
Rollins, Inc.	45
Schwan's	711
Starbucks	3
Sykes	4
TeleTech	44
Time Warner Cable	216
U-Haul International	2
U.S. Bank	6
United Rentals	113
UnitedHealth Group	34
Verizon	4,034
Wells Fargo	18
Xerox Services	10

sification method when the unsupervised approach failed to produce sufficiently granular job-type clusters. The supervised method reverses the order of qualitative input, because a human coder first classified a subset of job titles, and this information was used to train a machine algorithm to replicate the human coding by finding word combinations that were predictive of the manually coded subset.

One human coder manually classified a randomly selected 919 job titles from the full set of 210,718. These titles were classified into 16 job types based on the criteria outlined in the Bureau of Labor Statistics Standard Occupational Classification (Bureau of Labor Statistics, 2010). The human coder read each of the 919 titles and assigned each to one category:

- business—nonmanagement positions, such as hr, business development, strategy
- clerical—administrative nonmanagerial support
- design and media—graphic design, marketing implementation, media relations
- education—any grade level for teaching occupations
- engineering—any specialty or educational level of engineering, including building engineer, mechanical engineer, electrical engineer, and computer hardware engineering
- finance—investment or retail banking jobs that involve financial skills (not clerical, software, or customer service for a bank)
- health care—any form or level of clinical occupation
- hospitality and food service—positions involving provisioning of food, rooms, cleaning services
- legal—positions providing contracting, litigation, or other legal services
- life sciences—positions for biotech, pharmaceutical, or other nonclinical life sciences work
- maintenance—maintaining grounds or infrastructure of a building but not engineering or hospitality
- management—position primarily focused on management of other personnel who themselves could be classified in any other job type
- protection—positions primarily oriented toward protecting other persons or property from physical harm, theft, etc.
- sales and customer service—selling and service interactions, whether business-to-business or business-to-customer, such as retail sales
- software and analytics—computer programming, data coding and databases, statistical analysis, expert qualitative analysis
- transportation and factory—movement of goods, stocking of goods, production of goods in factory setting

We extracted word lists from the job titles that were in each of the title categories, and then manually purged these lists of nongeneralizable words, such as the names of particular employers (e.g., Merrill Lynch) or places (e.g., Philadelphia, PA). We then coded the presence of each word in each of the manually coded job titles using the *stringr* package in R (Wickham, 2015).

We then split the manually coded job titles in half, using half the data to train the computer algorithm and the other half to evaluate the algorithm's statistical performance (i.e., ability to replicate the original human coding). This is one standard form of performance evaluation in machine learning approaches (Lantz, 2013). We trained a support vector machine

(SVM) to replicate the human coded categories. SVM attempts to separate the coded categories based on discriminating variables (in this case, word presence/absence) among cases that lie statistically close to the boundary between the coded categories. We used the Gaussian kernel to allow for nonlinear boundary conditions with the kernlab package in R, function `ksvm` (Kratzoglou, Smola, Hornik, and Zeileis, 2004). After evaluating the performance of the trained SVM on the reserved test data, we then applied the SVM to classify the entire set of job titles.

We produced manual codes for 873 of the randomly selected 919 job titles. We found that 46 titles contained insufficient information to assign any job type. Among the original 16 categories, six occurred fewer than 20 times in the training data, which prevented us from being able to train the SVM to recognize them. These infrequent job types were design and media, education, legal, life sciences, maintenance, and protection. Thus, we trained the SVM to categorize titles into the remaining 10 job types:

- business
- clerical
- engineering
- finance
- healthcare
- hospitality and food service
- management
- sales and customer service
- software and analytics
- transportation and factory.

When evaluated against the reserved test data, we found the SVM was accurate enough to generate meaningful distributions. Table B.2 shows the classification matrix among the test data. Overall, the SVM algorithm classified 68 percent of the titles in the same manner as the human coder. These matching classifications are represented as the diagonal in Table B.2. However, a relatively high proportion of these misclassifications occurred when the business category was predicted or observed. Removing business from Table B.2 results in a 73-percent overall match in the manual and SVM classifications.

Having constructed a supervised SVM classifier suitably accurate to generate frequency distributions, we applied this classifier across the entire 210,718 job titles and then plotted the frequency of each job type. These are presented in Figures 3.5 through 3.8 in Chapter Three.

50 Evaluation of the Military Spouse Employment Partnership: Progress Report on First Stage of Analysis

[illegible]

Abbreviations

2012 ADSS	2012 Survey of Active Duty Spouses
AVF	all-volunteer force
CAPE	Cost Assessment and Program Evaluation
DMDC	Defense Manpower Data Center
XML	Extensible Markup Language
NAICS	North American Industry Classification System
PCS	permanent change of station
POC	point of contact
SECO	Spouse Education and Career Opportunities
SVM	support vector machine

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